Established in 1889, the Ontario Association of Architects (OAA) is the self-regulating body for the province's architecture profession. It governs the practice of architecture and administers the Architects Act *in order to serve and protect the public interest.*

Kevin Griffiths, Chair
Canadian Commission on Building and Fire Codes Designations
1200 Montreal Road
Ottawa, Ontario
K1A 0R6

December 16, 2022

Re: Public review on proposed changes to the 2020 National Model Codes – Fall 2022

Kevin,

The Ontario Association of Architects (OAA) continues to monitor code changes as the Ontario Building Code harmonizes with the National Codes. In this time of great reform, there is a unique opportunity for both codes to ensure energy efficiency is advanced to meet various provincial and national climate action objectives.

The OAA strongly urges the government to implement an energy step protocol in the National Codes. This enshrinement would ensure application and acceptance of these standards across jurisdictions, and would help Canada advance climate action in a substantive way.

According to the Canada Green Building Council (CaGBC), approximately 30% of greenhouse gas emissions come from the built environments in which Canadians live, work, and play. Objective, tiered performance metrics help everyone understand energy use in buildings. Many OAA members have opined that municipal green standards are their single most effective tool to pitch climate considerations to their clients.

In response to the consultation, "Public review on proposed changes to the 2020 National Model Codes – Fall 2022," the OAA submits the following documents for your consideration:

1. The Association's review of the proposed code changes for the National Building Code, National Plumbing Code, National Fire Code, and National Energy Code (see attachment)

2. The OAA's covering letter and submission to the Ministry of Municipal Affairs and Housing (MMAH) Winter 2022 Code Consultation. (see attachment)

3. An email response from the MMAH to the OAA's submission, indicating concerns about energy efficiency should be brought to the National Research Council (NRC).

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OAA staff and volunteers spent many hours on the attached submission, and respectfully request it be examined in response to the current National Code Consultation.

The OAA enjoys a longstanding, collaborative relationship with government, and the Association and its members stand ready to work alongside government to ensure the code harmonization results in transformative changes to energy efficiency requirements in buildings. Built environments are a key contributor to greenhouse gas emissions and, with various changes to the prevailing codes, could help to better mitigate further environmental degradation.

Sincerely,

Susan Speigel, Architect
OAA, FRAIC
President

cc: The Honourable François-Philippe Champagne - Minister of Innovation, Science and Industry
The Honourable Steven Guilbeault - Minister of Environment and Climate Change
The Honourable Ahmed Hussen - Minister of Housing and Diversity and Inclusion
Mansoor Mahmood - Director, Building and Development Branch, MMAH
James Ross - Manager (Acting) Building Code Policy Development Unit, MMAH

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Table 1: POTENTIAL CHANGES TO THE NATIONAL BUILDING CODE 2020:

National Building Code 2020	Ranking	Status	Comments - Ontario Association of Architects
Division B			
Part 1 - General			
1.3.1.2. Applicable Editions			
1804 - Updates to Referenced Documents	6	Not Reviewed	
Part 3 - Fire Protection, Occupant Safety and Accessibility			
3.2.4.2. Continuity of Fire Alarm System			
1698 - Addition of a Cross-reference to Firestopping Provisions for Permitted Service Penetrations	1	I support this proposed change as is.	
3.2.4.22. Voice Communication Systems for High Buildings			
1749 - Voice Communication Systems - Referenced Standards on Intelligibility	1	I support this proposed change as is.	
3.3.1.9. Corridors			
1711 - "Clear Width" versus "Unobstructed Width"	1	I support this proposed change as is.	
3.3.1.19. Tactile Walking Surface Indicators			
1571 - Tactile Direction Indicators Footnote1	1	I support this proposed change as is.	
3.3.2. Assembly Occupancy			
1752 - Requirements for Seats, Aisles and Guards for Assembly Occupancies	1	I support this proposed change as is.	

Table 1: POTENTIAL CHANGES TO THE NATIONAL BUILDING CODE 2020:

National Building Code 2020	Ranking	Status	Comments - Ontario Association of Architects
3.3.2.4. Fixed Seats			
1711 - "Clear Width" versus "Unobstructed Width"	1	I support this proposed change as is.	
3.4.6.6. Guards			
361 - Size Limit for Open Stringers	1	I support this proposed change as is.	
3.7.2.2. Water Closets			
1750 - Clarification on Gendered Washrooms	1	I support this proposed change as is.	
3.8.2.10. Signs and Indicators			
1571 - Tactile Direction Indicators Footnote1	1	I support this proposed change as is.	
3.8.3.9. Accessible Signs			
1571 - Tactile Direction Indicators Footnote1	1	I support this proposed change as is.	

Table 1: POTENTIAL CHANGES TO THE NATIONAL BUILDING CODE 2020:

National Building Code 2020	Ranking	Status	Comments - Ontario Association of Architects
Part 5 - Environmental Separation			
5.5.1.2. Vapour Barrier Properties and Installation			
1426 - Replacement of an Outdated CGSB Standard	1	I support this proposed change as is.	
1758 - Vapour Barrier Materials and Installation	2	I support this proposed change as is with comment(s).	A more in-depth explanation and better tools for analysis is useful but I wonder if it will be heeded for small Part 3 projects or renovations that have limited scope and budget. There might be instances where 'rule of thumb' is warranted but with further clarification rather than just inside or outside..
5.9.1.1. Compliance with Applicable Standards			
1426 - Replacement of an Outdated CGSB Standard	1	I support this proposed change as is.	
1483 - Introduction of a New Standard on Asphalt Core Boards	1	I support this proposed change as is.	
1703 - Gypsum Board Application on Flat Wall Insulating Concrete Form Units	1	I support this proposed change as is.	
1759 - Deletion of an Outdated CAN/CGSB Standard	1	I support this proposed change as is.	
1760 - Deletion of an Outdated CAN/CGSB Standard	1	I support this proposed change as is.	
5.9.2. Windows, Doors and Skylights			
1756 - Clarifying Requirements for Fenestration Assemblies	1	I support this proposed change as is.	

Table 1: POTENTIAL CHANGES TO THE NATIONAL BUILDING CODE 2020:

National Building Code 2020	Ranking	Status	Comments - Ontario Association of Architects
5.9.2.3. Structural and Environmental Loads, Air Leakage and Water Penetration			
1757 - Installation of High Exposure Fenestration	1	I support this proposed change as is.	
5.9.3. Other Fenestration Assemblies			
1756 - Clarifying Requirements for Fenestration Assemblies	1	I support this proposed change as is.	
5.9.4. Exterior Insulation Finish Systems			
1755 - EIFS Installation Requirements	1	I support this proposed change as is.	
Part 9 - Housing and Small Buildings			
9.5.4.1. Hallway Width			
1711 - "Clear Width" versus "Unobstructed Width"	1	I support this proposed change as is.	
9.9.5.2. Occupancies in Corridors			
1711 - "Clear Width" versus "Unobstructed Width"	1	I support this proposed change as is.	
9.10.1.3. Items under Part 3 Jurisdiction			
1679 - Clarification of Fire-protection Requirements for Self-service Storage Buildings	1	I support this proposed change as is.	

Table 1: POTENTIAL CHANGES TO THE NATIONAL BUILDING CODE 2020:

National Building Code 2020	Ranking	Status	Comments - Ontario Association of Architects
9.23.10.1. Stud Size and Spacing			
1677 - Clarification of 38 mm × 140 mm Stud Usage	1	I support this proposed change as is.	
9.36.2.4. Calculation of Effective Thermal Resistance of Assemblies			
1657 - Masonry Terminology used in Table A-9.36.2.4.(1)-D	1	I support this proposed change as is.	
9.36.2.5. Continuity of Insulation			
1746 - Harmonizing Masonry Terminology	1	I support this proposed change as is.	
9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground			
1746 - Harmonizing Masonry Terminology	1	I support this proposed change as is.	

Table 2: POTENTIAL CHANGES TO THE NATIONAL FIRE CODE 2020:

National Fire Code 2020

	Ranking	Status	Comments - Ontario Association of Architects
Division B			
Part 1 - General			
1.3.1.2. Applicable Editions			
1804 - Updates to Referenced Documents	6	Not Reviewed	
Part 2 - Building and Occupant Fire Safety			
2.7.1.4. Signs			
1660 - Soft Conversion - Stroke Width Requirement for Signs	1	I support this proposed change as is.	
2.7.1.5. Nonfixed Seating			
1711 - "Clear Width" versus "Unobstructed Width"	1	I support this proposed change as is.	
1751 - Requirements for Non-fixed Seating in Assembly Occupancies	1	I support this proposed change as is.	
Part 4 - Flammable and Combustible Liquids			
4.3.5.2. Location of Vent Pipe Outlets			
1683 - Termination of the Emergency Vents of Secondary Containments in Double-walled Storage Tanks	6	Not Reviewed	
4.3.11.3. Installation			
1691 - Vent Pipe Outlets for Underground Storage Tanks	6	Not Reviewed	

Table 3: POTENTIAL CHANGES TO THE NATIONAL PLUMBING CODE 2020:

National Plumbing Code 2020

	Ranking	Status	Comments - Ontario Association of Architects
Division B			
Part 1 - General			
1.3.1.2. Applicable Editions			
1804 - Updates to Referenced Documents	6	Not Reviewed	
Part 2 - Plumbing Systems			
2.2.6.10. Stainless Steel Pipe			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	
2.2.6.11. Stainless Steel Butt Weld Pipe Fittings			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	
2.2.6.12. Stainless Steel Pipe Flanges			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	
2.2.6.13. Stainless Steel Threaded Fittings			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	
2.2.6.14. Stainless Steel Tube			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	
2.2.7.1. Copper and Brass Pipe			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	
2.2.7.2. Brass or Bronze Pipe Flanges and Flanged Fittings			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	

Table 3: POTENTIAL CHANGES TO THE NATIONAL PLUMBING CODE 2020:

National Plumbing Code 2020	Ranking	Status	Comments - Ontario Association of Architects
2.2.7.3. Brass or Bronze Threaded Water Fittings			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	
2.2.7.4. Copper Tube			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	
2.2.7.6. Solder-Joint Water Fittings			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	
2.2.7.7. Flared-Joint Fittings for Copper Water Systems			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	
2.2.9. Jointing Materials			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	
2.2.10. Miscellaneous Materials			
1716 - Protection of Potable Water from Chemical Contamination	6	Not Reviewed	
2.6.1.7. Relief Valves			
1371 - Relief Valves	6	Not Reviewed	

Table 4: POTENTIAL CHANGES TO THE NATIONAL ENERGY CODE 2020:

National Energy Code 2020	Ranking	Status	Comments - Ontario Association of Architects
Division A			
Part 1 - Compliance			
1.4.1.2. Defined Terms			
1650 - Definition of "Installed Interior Lighting Power"	1	I support this proposed change as is.	
Division B			
Part 1 - General			
1.3.1.2. Applicable Editions			
1804 - Updates to Referenced Documents	6	Not Reviewed	
Part 4 - Lighting			
4.2.4.1. Requirements			
1662 - Programming of Exterior Lighting Controls	2	I support this proposed change as is with comment(s).	Further review on the impact of site safety is recommended.
Part 5 - Heating, Ventilating and Air-conditioning Systems			
5.1.1.4. Definitions			
1671 - Definition of "System"	2	I support this proposed change as is with comment(s).	For consideration, are passive systems defined, and would they fall under the definition of "systems".
5.2.4.2. Type and Location of Dampers			
1723 - Motorized Dampers	1	I support this proposed change as is.	
5.2.10.1. Energy Recovery Systems			
1733 - Energy Recovery Systems	1	I support this proposed change as is.	

Table 4: POTENTIAL CHANGES TO THE NATIONAL ENERGY CODE 2020:

National Energy Code 2020	Ranking	Status	Comments - Ontario Association of Architects
Part 8 - Building Energy Performance Compliance Path			
8.4.5.2. Boiler			
1725 - Part-Load Performance Characteristics	5	I have reviewed this proposed change and I have no opinion on it.	
8.4.5.3. Furnace			
1725 - Part-Load Performance Characteristics	5	I have reviewed this proposed change and I have no opinion on it.	

James Ross, Manager Building Code Policy Development Unit
Ministry of Municipal Affairs and Housing
College Park, 16th Floor
777 Bay Street
Toronto, Ontario
M7A 2J3

April 14, 2022

Re: Building Code Consultation – Winter 2022 (Part 2)

James,

The Ontario Association of Architects (OAA) is continuing to watch closely as the harmonization of the Ontario Building Code (OBC) and the National Construction Codes (NCC) takes place.

In addition to the feedback already provided on March 11, 2022, the Association is particularly concerned that the current proposed changes for energy efficiency appear to move Ontario's standards backward from the current requirements in SB-10 and SB-12 to a lesser standard (i.e. Tier 3 from section 9.36 of the NCC and Tier 1 from the NECB). While the Ministry contends energy efficiency requirements will be more stringent under the new regime, our own assessments do not come to the same conclusion.

We strongly caution that harmonization must not, in any way, reduce energy efficiency requirements in Ontario. As you are well aware, the world is facing a climate emergency. Based on estimates from various sources, approximately one-third of greenhouse gas emissions come from the built environments in which Canadians live, work, and play. Improving the energy efficiency of our buildings and accelerating our progress toward net zero carbon is critical if Ontario intends to meet its stated greenhouse gas reduction targets.

As such, the OAA encourages the implementation of energy step codes, both in the OBC and NCC. The Association has long supported objective targets based on Total Energy Use Intensity (TEUI) for a wide range of building occupancies as a best practice, which is demonstrated by the OAA's own TEUI Calculator tool. Objective, tiered performance metrics help everyone understand energy use in buildings and can help position Ontario to achieve its 2030 targets. Further, they reduce red-tape, are standards-agnostic, and improve the efficiency of designers by allowing use of a wide range of standards to arrive at the EUI goals and eliminating the need for modelling against a reference building to prove a 'better than' scenario. As well, the inclusion of tiers in the OBC would provide a framework to move toward net zero standards by 2030, something that does not otherwise seem possible in the next eight years.

In British Columbia, the BC Energy Step Code is an optional compliance path in the BC Building Code that local governments may use to incentivize or require a level of energy efficiency in new construction that goes beyond the minimum requirements. Builders may voluntarily use the BC Energy Step Code as a new compliance path for meeting the energy-efficiency requirements of the BC Building Code. As well, municipalities can require higher tiers for certain building types. Currently, more than

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80 municipalities in BC have submitted their initial notification, indicating to the BC government that they have started consulting on the BC Energy Step Code. This Energy Step Code has adopted an absolute approach and the OAA supports a similar adoption.

Within Ontario, the City of Toronto took a leadership role by implementing its Toronto Green Standard (TGS) in 2010. In this case, all newly constructed Part 3 buildings are required to meet Step 1 of the current version of the TGS, and project proponents can opt to go beyond Step 1 in exchange for various development incentives. On the verge of implementing Version 4 of the TGS, the City of Toronto is leveraging its step code to go after more aggressive carbon reduction targets to achieve their emissions reduction goals.

Any step code the provincial government introduces should be extended to existing Part 3 buildings undergoing significant renovations. In these cases, the buildings should be required to achieve Step 1 of the code in order to proceed with the renovations.

Based on estimates from the current version 3 of the TGS, it will result in greenhouse gas emission reductions of 30.6 megatons by 2050, equivalent to taking 250,000 cars off the road each year. Moreover, it contributes to the TransformTO's citywide emissions reductions target of net zero by 2040.

As of 2021, more than 2500 new developments in Toronto have been required to meet Tier 1 and 150 projects have participated in the TGS Development Charges Refund Program for certified high-performance buildings. Other municipalities in Ontario, such as Whitby and Barrie, have also implemented, or are considering implementing, energy step codes.

The OAA urges government to consider the implications of replacing SB-10 and SB-12 as it is currently proposed. If passed, this will create:

- significant confusion in the marketplace due to the proposed complexity and unfamiliarity in correlating SB-10 and SB-12 with matching tiers in the proposed codes;
- chaos among designers (architects, Licensed Technologists OAA, engineers, and BCIN holders) unfamiliar with these approaches to Tiered Codes;
- conflicts at the point of application for permits, where there are significant differences between buildings and approaches to the 'Energy Conservation Points' opted for which in many cases will be lower than values required in SB-10 and SB-12; and
- significant blowback among all levels of designers and builders in the AEC sector as there has not been stakeholder buy-in with this "one-and-done" approach.

If harmonization efforts require MMAH to adopt the standards in the 2020 NECB and NBC, then the OAA recommends the government pursue adoption of one or more of the following options:

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- the *entire* framework of the proposed National Step Codes, rather than partial adoption that can be subject to future additions, revisions, and improvements within the limited time frame before 2030; and/or,
- Ensure that in no case can NBC/NECB Tiers allow a lower level of performance than any table noted in SB-10 or SB-12, and/or
- Adoption of NBC/NECB with Absolute Target References (i.e. TEUI) for a Range of Building Occupancies; and/or,
- predicted CO_2e emissions in $MTCO_2e$ units (GHGI); and/or,
- a standards-agnostic approach to energy modelling on all performance paths (that is, eliminate references to EnerGuide modelling); and/or
- mandatory airtightness testing/validation—without this, there is no way of validating if standards are being complied with, and the small cost of testing will have notable public benefits in terms of building quality, performance, and durability.

The OAA requests to meet with you to discuss the concerns outlined above; in particular, we would like to demonstrate how the proposed changes will set Ontario backward in terms of energy efficiency. The Association strongly urges government to only implement changes that will help improve energy efficiency standards across the province.

The OAA enjoys a longstanding, collaborative relationship with the government, and looks forward to continued work alongside the MMAH to promote and protect the public interest.

Sincerely,

Susan Speigel, Architect
OAA, FRAIC
President

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OAA's Submission (part 2 of 2) - Proposed Building Codes Changes Issued by MMAH (Winter Consultation 2022)

SECTION 9.36. ENERGY EFFICIENCY

- It has been proposed that SB-12 is being replaced by Section 9.36. Energy Efficiency of the National Building Code (NBC).
- Please also see Ontario's Building Code's Part 12 for consequential changes
- Below is the entire Section 9.36 of the National Building Code including intended changes introduced through the 2020 National Building Code.
- Where the 2015 NBC Section 9.36 is changed, related National Proposed Change Forms (PCFs) are provided via hyperlinks. Any further proposed changes to the PCFs (Ontario specific) are shown in blue. These proposed modifications to the PCFs are below:
  - ○ Tier 3 of the NBC Tier System is proposed to be selected, and all other tiers excluded,
  - ○ For prescriptive approaches, 20 points is assigned for the proposed Tier 3,
  - ○ In the cases of performance method, air tightness values for reference and proposed houses are set as equal, if the air tightness test is not carried out.
  - In addition, any changes introduced to 9.36 through 2020 NECB edition is identified by a light grey shaded (background) row in the table and the related National Proposed Change Forms (PCF) are attached.
- When reviewing PCFs, please scroll down and review the latest version of the change which is written under "Revised Proposed Change Following Public Review".
- The current version of the Ontario Building Code already contains Sections 9.36 to 9.40. The adoption of the National Building Code's Section 9.36 will require renumbering of some Sections in Part 9.
- The current Supplementary Standard SB-12 is available for comparison by clicking here.

Proposed Ontario Code Sentence Number	Proposed Ontario Code Article/ Title	Proposed Ontario Code Provision	Link to the National PCF(s)	Rank	Status	Comments - Ontario Association of Architects
9.36.1. General						
9.36.1.1.(1)	9.36.1.1. Scope	(1) This Section is concerned with the energy used by *buildings* as a result of (a) the design and construction of the *building* envelope, and (b) the design and construction or specification of systems and equipment for (i) heating, ventilating or air-conditioning, and (ii) service water heating.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.1.2.(1)	9.36.1.2. Definitions	(1) For the purpose of this Section, the term "common space" shall mean all spaces required to be *conditioned spaces* in accordance with the requirements of the Code that are not within a *suite* but shall not include crawl spaces and *vertical service spaces* .	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.1.2.(2)	9.36.1.2. Definitions	(2) For the purpose of this Section, the term "overall thermal transmittance," or U-value, shall mean the rate, in W/(m2×K), at which heat is transferred through a *building* assembly that is subject to temperature differences.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.1.2.(3)	9.36.1.2. Definitions	(3) For the purpose of this Section, the term "effective thermal resistance," or RSI value, shall mean the inverse of the overall thermal transmittance of an assembly, in (m2×K)/W.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.1.2.(4)	9.36.1.2. Definitions	(4) For the purpose of this Section, the term "fenestration" shall mean all *building* envelope assemblies, including their frames, that transfer visible light, such as windows, clerestories, skylights, translucent wall panels, glass block assemblies, transoms, sidelights, sliding, overhead or swinging glass doors, and glazed inserts in doors, etc.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.1.2.(5)	9.36.1.2. Definitions	(5) For the purpose of this Section, the term "annual energy consumption" shall mean the annual sum of service water heating and space- conditioning energy consumption of the proposed house design, as calculated in accordance with Article 9.36.5.4. or 9.36.7.3. as applicable.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Provide units, and make consistent. Align with ERS. Reference to building size. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.1.2.(6)	9.36.1.2. Definitions	(6) For the purpose of this Section, the term "house energy target" shall mean the annual energy consumption of the reference house, as calculated in accordance with Article 9.36.5.4. or 9.36.7.3. as applicable.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.1.2.(7)	9.36.1.2. Definitions	(7) For the purpose of this Section, the term "principal ventilation rate" shall mean the normal operating exhaust capacity of the principal ventilation fan as required by Article 9.32.3.3.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.1.2.(8)	9.36.1.2. Definitions	(8) For the purpose of this Section, the term "volume of conditioned space" shall refer to the volume measured at the interior surfaces of exterior walls, ceilings and floors of a house or building.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

Proposed Ontario Code Sentence Number	Proposed Ontario Code Article/ Title	Proposed Ontario Code Provision	Link to the National PCF(s)	Rank	Status	Comments - Ontario Association of Architects
9.36.1.3.(1)	9.36.1.3. Compliance and Application	(1) Except as provided in Sentences (2) to (5), *buildings* shall comply with (a) the prescriptive or trade-off requirements in Subsections 9.36.2. to 9.36.4., (b) the performance requirements in Subsection 9.36.5., ~~or~~ (c) the tiered performance requirements in Subsection 9.36.7., ~~or~~ (d) the tiered prescriptive requirements in Subsection 9.36.6., or c(e) the NECB.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0 and https://www.dropbox.com/s/lkss64q6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table. We support the tiered model that Ontario has committed to. Clauses (c) and (d) suggest that the tiers are adopted contrary to the other sections.
9.36.1.3.(2)	9.36.1.3. Compliance and Application	(2) Subsections 9.36.2. to 9.36.4. apply to (a) *buildings* of *residential occupancy* to which Part 9 applies, (b) *buildings* containing *business and personal services*, *mercantile* or *low-hazard industrial occupancies* to which Part 9 applies whose combined total *floor area* does not exceed 300 m_2, excluding parking garages that serve *residential occupancies*, and (c) *buildings* containing a mix of the *residential* and non-*residential occupancies* described in Clauses (a) and (b).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.1.3.(3)	9.36.1.3. Compliance and Application	(3) Subsection 9.36.5. and 9.36.7. applies apply ~~only to (a) houses with or without a *secondary suite*, and~~ (b) *buildings* containing only *dwelling units* and common spaces whose total *floor area* does not exceed 20 % of the total *floor area* of the *building*.	https://www.dropbox.com/s/lkss64q6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.1.3.(4)	9.36.1.3. Compliance and Application	(4) Subsection 9.36.6. applies only to buildings of residential occupancy to which Part 9 applies.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.1.3.(45)	9.36.1.3. Compliance and Application	(5) *Buildings* containing non-*residential occupancies* whose combined total *floor area* exceeds 300 m2 or *medium-hazard industrial occupancies* shall comply with the NECB.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.1.3.(56)	9.36.1.3. Compliance and Application	(6) *Buildings* or portions of *buildings* that are not required to be *conditioned spaces* are exempted from the requirements of this Section.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2. Building Envelope						
9.36.2.1.(1)	9.36.2.1. Scope and Application	(1) Except as provided in Sentence (2), this Subsection is concerned with the loss of energy due to heat transfer and air leakage through materials, components and assemblies, including their interfaces, forming part of the *building* envelope where it separates *conditioned space* from unconditioned space, the exterior air or the ground.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.1.(2)	9.36.2.1. Scope and Application	(2) The requirements of this Subsection also apply to components of a *building* envelope assembly that separate a *conditioned space* from an adjoining *storage garage*, even if the *storage garage* is intended to be heated.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.1.(3)	9.36.2.1. Scope and Application	(3) Except for skylight shafts addressed in Sentence 9.36.2.6.(4), for the purpose of this Subsection, wall assemblies inclined less than 60° from the horizontal shall be considered as roof assemblies, and roof assemblies inclined 60° or more from the horizontal shall be considered as wall assemblies.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.1.(4)	9.36.2.1. Scope and Application	(4) The properties, performance and installation of windows, doors and skylights shall also conform to Section 9.7.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.1.(5)	9.36.2.1. Scope and Application	(5) The properties, location and installation of thermal insulation, *air barrier systems*, *vapour barriers*, and materials with low air or vapour permeance shall also conform to Section 9.25.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	9.25.2.3.(4) cross reference change to require an insulation type that won't be damaged by water - see comment in section above. Also, refer to Ontario Association of Architects cover letter that accompanies this table.

Proposed Ontario Code Sentence Number	Proposed Ontario Code Article/ Title	Proposed Ontario Code Provision	Link to the National PCF(s)	Rank	Status	Comments - Ontario Association of Architects
9.36.2.2.(1)	9.36.2.2. Determination of Thermal Characteristics of Materials, Components and Assemblies	(1) The thermal characteristics of materials shall be determined by calculation or by testing in accordance with the applicab le product standards listed in the Code or, in the absence of such standards or where such standards do not address the determination of thermal resistance, in accordance with (a) ASTM C177, "Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus," or (b) ASTM C518, "Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus."	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.2.(2)	9.36.2.2. Determination of Thermal Characteristics of Materials, Components and Assemblies	(2) Calculations and tests performed in accordance with Sentence (1) shall be carried out at an average temperature of 24±2°C and under a temperature differential of 22±2°C.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.2.(3)	9.36.2.2. Determination of Thermal Characteristics of Materials, Components and Assemblies	(3) The thermal characteristics of windows, doors and skylights shall be determined by calculation or testing in accordance with (a) CSA A440.2/A440.3, "Fenestration energy performance/User guide to CSA A440.2:19, Fenestration energy performance," for the reference sizes listed therein, or (b) NFRC 100, "Procedure for Determining Fenestration Product U-factors," and NFRC 200, "Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence," for the reference sizes listed therein.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.2.(4)	9.36.2.2. Determination of Thermal Characteristics of Materials, Components and Assemblies	(4) The effective thermal resistance of opaque *building* assemblies shall be determined from (a) calculations conforming to Article 9.36.2.4., or (b) laboratory tests performed in accordance with ASTM C1363, "Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus," using an indoor air temperature of 21±1°C and an outdoor air temperature of –18±1°C.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.2.(5)	9.36.2.2. Determination of Thermal Characteristics of Materials, Components and Assemblies	(5) The thermal characteristics of log walls shall be determined by calculation in accordance with Section 305 of ICC 400, "Standard on the Design and Construction of Log Structures."	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.3.(1)	9.36.2.3. Calculation of Ceiling, Wall, Fenestration and Door Areas	(1) The gross ceiling or roof area shall be calculated as the sum of the interior surface areas of insulated ceiling and/or roof assemblies and of skylight openings.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.3.(2)	9.36.2.3. Calculation of Ceiling, Wall, Fenestration and Door Areas	(2) Except as permitted by Sentence (3), the gross wall area shall be calculated as the sum of the interior surface areas of all exterior *building* envelope assemblies above the finished ground level that are inclined 60° or more from the horizontal, including (a) *rim joists*, (b) fenestration and opaque portions of doors, (c) insulated walls extending from finished ground level to the interior side of the insulated ceiling and/or roof assembly, and (d) the exposed areas of below-	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.3.(3)	9.36.2.3. Calculation of Ceiling, Wall, Fenestration and Door Areas	(3) Where a *building* of *residential occupancy* contains more than 2 *dwelling units*, the gross wall area enclosing *conditioned space* shall be permitted to include the interior surface areas of walls that enclose a *suite*, measured from the top surface of the lowest floor to the underside of the highest ceiling in the *suite*.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.3.(4)	9.36.2.3. Calculation of Ceiling, Wall, Fenestration and Door Areas	(4) Fenestration and door areas shall be the actual sizes of windows, doors and skylights including all related frame and sash members.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.3.(5)	9.36.2.3. Calculation of Ceiling, Wall, Fenestration and Door Areas	(5) The fenestration area made of flat panes that are not all in the same plane or curved panes shall be measured along the surface of the glass.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.4.(1)	9.36.2.4. Calculation of Effective Thermal Resistance of Assemblies	(1) In calculating the effective thermal resistance of assemblies for the purpose of comparison with the requirements of Articles 9.36.2.6. and 9.36.2.8., the thermal bridging effect of closely spaced, repetitive structural members, such as studs and joists, and of ancillary members, such as lintels, sills and plates, shall be accounted for.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.2.4.(2)	9.36.2.4. Calculation of Effective Thermal Resistance of Assemblies	(2) Minor penetrations through assemblies, such as pipes, ducts, equipment with through-the-wall venting, packaged terminal air conditioners or heat pumps, shelf angles, anchors and ties and associated fasteners, and minor structural members that must partially or completely penetrate the *building* envelope to perform their intended function need not be taken into account in the calculation of the effective thermal resistance of that assembly.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.4.(3)	9.36.2.4. Calculation of Effective Thermal Resistance of Assemblies	(3) Major structural penetrations, such as balcony and canopy slabs, beams, columns and ornamentation or appendages that must completely penetrate the *building* envelope to perform their intended function, need not be taken into account in the calculation of the effective thermal resistance of the penetrated assembly, provided (a) the insulation is installed tight against the outline of the penetration, and (b) the sum of the areas of all such major structural penetrations is limited to a maximum of 2% of the gross wall area calculated as described in Sentence 9.36.2.3.(2).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.4.(4)	9.36.2.4. Calculation of Effective Thermal Resistance of Assemblies	(4) Where a component of the *building* envelope is protected by an enclosed unconditioned space, such as a sun porch, enclosed veranda, vestibule or attached garage, the required effective thermal resistance of the *building* envelope component between the *building* and the unconditioned enclosure is permitted to be reduced by 0.16 (m^2×K)/W.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.5.(1)	9.36.2.5. Continuity of Insulation	(1) Except as provided in Sentences (2) to (10) and in Sentence 9.36.2.4.(3) regarding balcony and canopy slabs , and except for clearances around components required for fire safety reasons, interior *building* components that meet *building* envelope components and major structural members that partly penetrate the *building* envelope shall not break the continuity of the insulation and shall not decrease the effective thermal resistance at their projected area to less than that required in Articles 9.36.2.6. and 9.36.2.8.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.5.(2)	9.36.2.5. Continuity of Insulation	(2) Where an interior wall, *foundation* wall, *firewall* , *party wall* or structural element penetrates an exterior wall or insulated roof or ceiling and breaks the continuity of the plane of insulation, the penetrating element shall be insulated (a) on both of its sides, inward or outward from the *building* envelope, for a distance equal to 4 times its uninsulated thickness to an effective thermal resistance not less than that required for exterior walls as stated in Table 9.36.2.6.-A or 9.36.2.6.-B,	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.5.(3)	9.36.2.5. Continuity of Insulation	(3) Where a masonry fireplace or flue penetrates an exterior wall and breaks the continuity of the plane of insulation, it shall be insulated within the plane of insulation of the wall or within itself to an effective thermal resistance not less than 55% of that required for the exterior wall as stated in Table 9.36.2.6.-A or 9.36.2.6.-B.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.5.(4)	9.36.2.5. Continuity of Insulation	(4) Where an ornamentation or appendage penetrates an exterior wall and breaks the continuity of the plane of insulation, the penetrating element shall be insulated (a) on both of its sides, inward or outward from the *building* envelope, for a distance equal to 4 times the insulated thickness of the exterior wall to an effective thermal resistance not less than that required for the wall as stated in Table 9.36.2.6.-A or 9.36.2.6.-B, (b) within the plane of insulation of the wall to an effective thermal resistance not less than 55% of that required for the exterior wall, or (c) within the penetrating element to an effective thermal resistance not less than that required for the exterior wall	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.5.(5)	9.36.2.5. Continuity of Insulation	(5) Except as provided in Sentences (9) and (10), where two planes of insulation are separated by a *building* envelope assembly and cannot be physically joined, one of the planes of insulation shall be extended for a distance equal to at least 4 times the thickness of the assembly separating the two planes.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.5.(6)	9.36.2.5. Continuity of Insulation	(6) Except as provided in Sentence (7) and Article 9.36.2.11., where mechanical, plumbing or electrical system components, such as pipes, ducts, conduits, cabinets, chases, panels or recessed heaters, are placed within and parallel to a wall assembly required to be insulated, the effective thermal resistance of that wall at the projected area of the system component shall be not less than that required by Tables 9.36.2.6.- A, 9.36.2.6.-B, 9.36.2.8.-A and 9.36.2.8.-B	https://www.dropbox.com/s/qx746tdtw923991/Proposed_Change_1292.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.5.(7)	9.36.2.5. Continuity of Insulation	(7) The effective thermal resistance of a wall at the projected areas of plumbing and electrical system components, such as plumbing vent pipes, conduits, and electrical outlet and switch boxes, need not comply with Sentence (6), provided (a) the effective thermal resistance at the projected area of the system component is not less than 60% of that required in Articles 9.36.2.6.and 9.36.2.8., and (b) the insulation is continuous on the cold side behind the system component.	https://www.dropbox.com/s/qx746tdtw923991/Proposed_Change_1292.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.2.5.(8)	9.36.2.5. Continuity of Insulation	(8) Except as permitted by Article 9.36.2.11., where mechanical ducts, plumbing pipes, conduits for electrical services or communication cables are placed within the insulated portion of a floor or ceiling assembly, the effective thermal resistance of the assembly at the projected area of the ducts, pipes, conduits or cables shall be not less than 2.78 (m^2×K)/W.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.5.(9)	9.36.2.5. Continuity of Insulation	(9) Joints and junctions between walls and other *building* envelope components shall be insulated in a manner that provides an effective thermal resistance that is no less than the lower of the minimum values required for the respective adjoining components.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.5.(10)	9.36.2.5. Continuity of Insulation	(10) Sentence (1) does not apply where the continuity of the insulation is interrupted (a) between the insulation in the *foundation* wall and that of the floor slab, (b) by an integral perimeter footing of a slab-on-grade (see Sentences 9.25.2.3.(5) and 9.36.2.8.(8)), or (c) at the horizontal portion of a *foundation* wall that supports masonry veneer and is insulated on the exterior.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.6.(1)	9.36.2.6. Thermal Characteristics of Above-ground Opaque Building Assemblies	(1) Except as provided in Sentences (2) and 9.36.2.8.(3) and Articles 9.36.2.5. and 9.36.2.11., the effective thermal resistance of above-ground opaque *building* assemblies or portions thereof shall be not less than that shown for the applicable heating-degree day category in (a) Table 9.36.2.6.-A, where the ventilation system does not include heat-recovery equipment, or (b) Table 9.36.2.6.-B, where the ventilation system includes heat-recovery equipment conforming to Article 9.36.3.9.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.6.(2)	9.36.2.6. Thermal Characteristics of Above-ground Opaque Building Assemblies	(2) The effective thermal resistance of *rim joists* shall be not less than that required for above-ground walls in Table 9.36.2.6.-A or 9.36.2.6.-B, as applicable.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.6.(3)	9.36.2.6. Thermal Characteristics of Above-ground Opaque Building Assemblies	(3) A reduction in the effective thermal resistance of ceiling assemblies in attics under sloped roofs is permitted for a length no greater than 1 200 mm but only to the extent imposed by the roof slope and minimum venting clearance, provided the nominal thermal resistance of the insulation directly above the exterior wall is not less than 3.52 (m^2×K)/W.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.6.(4)	9.36.2.6. Thermal Characteristics of Above-ground Opaque Building Assemblies	(4) Except for tubular daylighting devices, the minimum effective thermal resistance values for walls stated in Tables 9.36.2.6.-A and 9.36.2.6.-B shall also apply to shafts for skylights.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.7.(1)	9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights	(1) Except as provided in Sentences (2) to (8) and Article 9.36.2.11., fenestration and doors shall have an overall thermal transmittance (U-value) not greater than, or an Energy Rating not less than, the values listed in Table 9.36.2.7.-A for the applicable heating-degree day category.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.7.(2)	9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights	(2) Skylights shall have an overall thermal transmittance not greater than the values listed in Table 9.36.2.7.-B for the applicable heating- degree day category.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.7.(3)	9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights	(3) Except for site-assembled or site-glazed factory-made fenestration products, curtain wall construction, and site-built windows and glazed doors that are tested in accordance with Sentence 9.36.2.2.(3), site-built windows and glazed doors need not comply with Sentence (1), provided they are constructed in accordance with one of the options presented in Table 9.36.2.7.-C for the applicable climate zone.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.7.(4)	9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights	(4) Glass block assemblies separating *conditioned space* from unconditioned space or the exterior shall have (a) an overall thermal transmittance of not more than 2.9 W/(m^2×K), and (b) a total aggregate area of not more than 1.85 m2.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.7.(5)	9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights	(5) One door separating a *conditioned space* from an unconditioned space or the exterior is permitted to have an overall thermal transmittance up to 2.6 W/(m^2×K).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.7.(6)	9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights	(6) Storm windows and doors need not comply with Sentence (1).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.2.7.(7)	9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights	(7) Vehicular access doors separating a *conditioned space* from an unconditioned space or the exterior shall have a nominal thermal resistance of not less than 1.1 (m^2×K)/W.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.7.(8)	9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights	(8) Access hatches separating a *conditioned space* from an unconditioned space shall be insulated to a nominal thermal resistance of not less than 2.6 (m^2×K)/W.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.8.(1)	9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground	(1) Except as provided in Sentence (2) and Article 9.36.2.5., the effective thermal resistance of *building* assemblies that are below-*grade* or in contact with the ground shall be not less than that shown for the applicable heating-degree day category in (a) Table 9.36.2.8.-A, where the ventilation system does not include heat-recovery equipment, or (b) Table 9.36.2.8.-B, where the ventilation system includes heat- recovery equipment conforming to Article 9.36.3.9.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Include table. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.8.(2)	9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground	(2) Where an entire floor assembly falls into two of the categories listed in Tables 9.36.2.8.-A and 9.36.2.8.-B, the more stringent value shall apply.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Include table. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.8.(3)	9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground	(3) Where the top of a section of *foundation* wall is on average less than 600 mm above the adjoining ground level, the above-ground portion of that section of wall shall be insulated to the effective thermal resistance required in Table 9.36.2.8.- A or 9.36.2.8.-B.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Include table. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.8.(4)	9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground	(4) Unheated floors-on- ground that are above the frost line and have no embedded heating pipes, cables or ducts shall be insulated to the effective thermal resistance required in Table 9.36.2.8.-A or 9.36.2.8.-B (a) on the exterior of the *foundation* wall down to the footing, or (b) on the interior of the *foundation* wall and, as applicable, (i) beneath the slab for a distance not less than 1.2 m horizontally or vertically down from its perimeter with a thermal break along the edge of the slab that meets at least 50% of the required thermal resistance, (ii) on top of the slab for a distance not less than 1.2 m horizontally from its perimeter, or (iii) within the wooden sleepers below the floor for a distance not less than 1.2 m horizontally from its perime	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Include table. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.8.(5)	9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground	(5) Except as provided in Sentence (6), floors-on- ground with embedded heating ducts, cables or pipes shall be insulated to the effective thermal resistance required in Table 9.36.2.8.-A or 9.36.2.8.- B under their full bottom surface including the edges.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Include table. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.8.(6)	9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground	(6) Where only a portion of a floor-on- ground has embedded heating ducts, cables or pipes, that heated portion shall be insulated to the effective thermal resistance required in Table 9.36.2.8.-A or 9.36.2.8.- B under its full bottom surface to 1.2 m beyond its perimeter including exterior edges if applicable.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.8.(7)	9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground	(7) In addition to the requirements stated in Sentences (5) and (6), heated floors-on- ground shall be insulated to the effective thermal resistance required in Table 9.36.2.8.-A or 9.36.2.8.-B vertically (a) around their perimeter, or (b) on the outside of the *foundation* wall, extending down to the level of the bottom of the floor.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.8.(8)	9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground	(8) Floors on permafrost shall be insulated to the effective thermal resistance required in Table 9.36.2.8.-A or 9.36.2.8.-B under the entire slab and around all edges, and under the integral perimeter footing.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.8.(9)	9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground	(9) Slabs-on-grade with an integral perimeter footing shall (a) be insulated to the effective thermal resistance required in Table 9.36.2.8.-A or 9.36.2.8.-B under the entire slab and around all edges, but not under the integral perimeter footing, and (b) be constructed with skirt insulation having the same effective thermal resistance as the insulation installed under the slab.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.2.8.(10)	9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground	(10) Junctions between below-*grade* assemblies shall be protected from the ingress of *soil* gas in conformance with Subsection 9.25.3.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.9.(1)	9.36.2.9. Airtightness	(1) The leakage of air into and out of *conditioned spaces* shall be controlled by constructing (a) a continuous *air barrier system* in accordance with Sentences (2) to (6), Subsection 9.25.3. and Article 9.36.2.10., (b) a continuous *air barrier system* in accordance with Sentences (2) to (6) and Subsection 9.25.3. and a *building* assembly having an air leakage rate not greater than 0.20 L/(s×m2) (Type A4) when tested in accordance with CAN/ULC-S742, "Standard for Air Barrier Assemblies – Specification," at a pressure differential of 75 Pa, or (c) a continuous *air barrier system* in accordance with Sentences (2) to (6) and Subsection 9.25.3. and a *building* assembly having an air leakage rate not greater than 0.20 L/(s×m2) when tested in accordance with ASTM E2357, "Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies," where (i) the *building* will not be subjected to sustained wind loads calculated based on a 1-in-50 hourly wind pressure that exceed 0.65 kPa, and (ii) the air barrier assembly is installed on the warm side of the thermal insulation of the opaque *building* assembly.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table. Air barriers are not the same thing as vapour barriers and there can be multiple strategies. Warm side may be 2/3rds from exterior (Control layer) This will cause endless confusion with AHJs.
9.36.2.9.(2)	9.36.2.9. Airtightness	(2) An *air barrier system* installed to meet the requirements of Sentence (1) shall be continuous (a) across construction, control and expansion joints, (b) across junctions between different *building* materials and assemblies, and (c) around penetrations through all *building* assemblies.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.9.(3)	9.36.2.9. Airtightness	(3) Windows, doors and skylights and their components shall comply with the minimum air leakage requirements stated in (a) AAMA/WDMA/CSA 101/I.S.2/A440, "North American Fenestration Standard/Specification for windows, doors, and skylights" (Harmonized Standard), and (b) CSA A440S1, "Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440-17, North American Fenestration Standard/Specification for windows, doors, and skylights."	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.9.(4)	9.36.2.9. Airtightness	(4) Vehicular access doors that separate heated garages from unconditioned spaces or the exterior shall be weather stripped around their perimeter to prevent air leakage.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.9.(5)	9.36.2.9. Airtightness	(5) Fireplaces shall be equipped with doors, enclosures or devices to restrict air movement through the *chimney* when the fireplace is not in use.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.9.(6)	9.36.2.9. Airtightness	(6) Where the airtight material used in the *air barrier system* is installed toward the exterior of the *building* envelope, its location and properties shall conform to Subsection 9.25.5.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(1)	9.36.2.10. Construction of Air Barrier Details	(1) Materials intended to provide the principal resistance to air leakage shall conform to CAN/ULC-S741, "Standard for Air Barrier Materials – Specification."	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(2)	9.36.2.10. Construction of Air Barrier Details	(2) Materials referred to in Sentence (1) shall be (a) compatible with adjoining materials, and (b) free of holes and cracks.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(3)	9.36.2.10. Construction of Air Barrier Details	(3) Where the *air barrier system* consists of rigid panel-type material, all joints shall be sealed.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(4)	9.36.2.10. Construction of Air Barrier Details	(4) Where the *air barrier system* consists of timber logs, all joints shall be sealed to resist airflow through gaps between logs that have shifted due to in-service conditions such as shrinkage and settling.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.2.10.(5)	9.36.2.10. Construction of Air Barrier Details	(5) Where the *air barrier system* consists of flexible sheet material, all joints shall be (a) lapped not less than 50 mm, (b) sealed, and (c) structurally supported.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(6)	9.36.2.10. Construction of Air Barrier Details	(6) Sealant material used for the purpose of creating a continuous *air barrier system* shall (a) be a non-hardening type, or (b) conform to (i) Subsection 9.27.4., (ii) CAN/ULC-S710.1, “Standard for Bead-Applied One Component Polyurethane Air Sealant Foam, Part 1: Material Specification,” or (iii) CAN/ULC-S711.1, “Standard for Bead-Applied Two Component Polyurethane Air Sealant Foam, Part 1: Material Specification.”	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(7)	9.36.2.10. Construction of Air Barrier Details	(7) Except as provided in Sentence 9.36.~~67.8.(1),~~ ~~buildings~~ to which this Subsection applies shall be constructed airtight in accordance with Sentences (8) to (18).	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Refer to Ontario Association of Architects cover letter that accompanies this table. Airtightness testing should be the norm and part of the tiered model, with exceptions noted for a prescriptive path without testing.
9.36.2.10.(78)	9.36.2.10. Construction of Air Barrier Details	(8) Penetrations by electrical wiring, outlets, switches or recessed light fixtures through the plane of airtightness shall be constructed airtight (a) where the component is designed to provide a seal against air leakage, by sealing the component to the air barrier material, or (b) where the component is not designed to provide a seal against air leakage, by covering the component with an air barrier material and sealing it to the adjacent air barrier material.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(89)	9.36.2.10. Construction of Air Barrier Details	(9) The joints between the *foundation* wall and the sill plate, between the sill plate and *rim joist*, between the *rim joist* and the subfloor material, and between the subfloor material and the bottom plate of the wall above shall be constructed airtight by (a) sealing all joints and junctions between the structural components, or (b) covering the structural components with an air barrier material and sealing it to the adjacent air barrier ma	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(910)	9.36.2.10. Construction of Air Barrier Details	(10) The interfaces between windows, doors and skylights and wall/ceiling assemblies shall be constructed airtight by sealing all joints and junctions between the air barrier material in the wall and the window, door or skylight frame.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(1011)	9.36.2.10. Construction of Air Barrier Details	(11) Cantilevered floors and floors over unheated spaces or over the exterior shall be constructed airtight by one of the following methods or a combination thereof: (a) sealing all joints and junctions between the structural components, or (b) covering the structural components with an air barrier material and sealing it to the adjacent air barrier material.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(1112)	9.36.2.10. Construction of Air Barrier Details	(12) Interior walls that meet exterior walls or ceilings whose plane of airtightness is on the interior of the *building* envelope and knee walls that separate *conditioned space* from unconditioned space shall be constructed airtight by (a) sealing all junctions between the structural components, (b) covering the structural components with an air barrier material and sealing it to the adjacent air barrier material, or (c) maintaining the continuity of the *air barrier system* above or through the interior wall or below or through the knee wall, as applicable.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(1213)	9.36.2.10. Construction of Air Barrier Details	(13) Steel-lined *chimneys* that penetrate the *building* envelope shall be constructed airtight by blocking the void between required clearances for metal *chimneys* and surrounding construction with sheet metal and sealant capable of withstanding high temperatures.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(~~13~~14)	9.36.2.10. Construction of Air Barrier Details	(14) *Masonry or concrete chimneys* that penetrate the *building* envelope shall be constructed airtight by mechanically fastening a metal flange or steel stud that extends not less than 75 mm out from the *chimney* and sealing the air barrier material to it with a sealant capable of withstanding high temperatures.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(1415)	9.36.2.10. Construction of Air Barrier Details	(15) Ducts that penetrate the *building* envelope shall be constructed airtight by sealing the penetration through the *building* envelope.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.2.10.(1516)	9.36.2.10. Construction of Air Barrier Details	(16) Plumbing vent stack pipes that penetrate the *building* envelope shall be constructed airtight by (a) sealing the air barrier material to the vent stack pipe with a compatible sealant or sheathing tape, or (b) installing a rubber gasket or prefabricated roof flashing at the penetration of the plane of airtightness then sealing it and mechanically fastening it to the top plate.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(1617)	9.36.2.10. Construction of Air Barrier Details	(17) Where a *party wall* meets the plane of airtightness, that junction shall be constructed airtight by sealing any voids within the *party wall* at the perimeter to the adjacent air barrier material and by (a) sealing all junctions between the structural components, or (b) covering the structural components with an air barrier material and sealing it to the adjacent air barrier material.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.10.(1718)	9.36.2.10. Construction of Air Barrier Details	(18) Where the concrete in a flat insulating concrete form wall acts as the air barrier, the continuity of the plane of airtightness shall be maintained between the concrete and adjacent air barrier materials.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.11.(1)	9.36.2.11. Trade-off Options for Above-ground Building Envelope Components and Assemblies	(1) Subject to the limitations stated in Sentences (6) to (8), the trade-off options described in Sentences (2) to (4) apply only to above-ground *building* envelope components and assemblies, or portions thereof, of a single *building* .	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.11.(2)	9.36.2.11. Trade-off Options for Above-ground Building Envelope Components and Assemblies	(2) The effective thermal resistance of one or more above-ground opaque *building* envelope assemblies is permitted to be less than that required in Article 9.36.2.6., provided (a) the total areas of all proposed and reference assemblies are equal, (b) the effective thermal resistance of one or more other proposed above-ground opaque *building* envelope assembly areas is increased to more than that required by Article 9.36.2.6., and (c) the sum of the areas of all traded above-ground opaque *building* envelope assemblies divided by their respective effective thermal resistance is less than or equal to what it would be if all assemblies complied with Article 9.36.2.6.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.11.(3)	9.36.2.11. Trade-off Options for Above-ground Building Envelope Components and Assemblies	(3) The effective thermal resistance of one or more windows, as calculated in accordance with Sentence (5), is permitted to be less than that required in Article 9.36.2.7., provided (a) the total areas of all traded windows are equal, (b) the traded windows are located in the same orientation, (c) the effective thermal resistance of one or more other windows is increased to more than that required by Article 9.36.2.7., and (d) the sum of the areas of all traded windows divided by their respective effective thermal resistance is less than or equal to what it would be if all windows complied with Article 9.36.2.7.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.11.(4)	9.36.2.11. Trade-off Options for Above-ground Building Envelope Components and Assemblies	(4) The effective thermal resistance of one or more portions of floor insulation or ceiling insulation in attics under sloped roofs in *buildings* that are one *storey* in *building height* is permitted to be less than that required in Article 9.36.2.6., provided (a) the total area of fenestration, excluding skylights, and doors does not exceed 15% of the above-ground gross wall area as calculated in accordance with Article 9.36.2.3., (b) the floor-to-ceiling height measured from the top of the subfloor to the underside of the finished ceiling of the *storey* does not exceed 2.34 m, (c) the distance measured from the top of the subfloor to the underside of the bottom chord of the truss or joist of the roof is not more than 2.39 m, and (d) the difference between the sum of the proposed areas of ceilings or floors divided by their respective proposed effective thermal resistance and the sum of the reference areas of ceilings or floors divided by their respective thermal resistance required in Article	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.11.(5)	9.36.2.11. Trade-off Options for Above-ground Building Envelope Components and Assemblies	(5) The effective thermal resistance of windows shall be determined as RSI = 1/U.	https://www.dropbox.com/s/ehoj137nt08za0f/Proposed_Change_1293.pdf?dl= 0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.11.(6)	9.36.2.11. Trade-off Options for Above-ground Building Envelope Components and Assemblies	(6) The reduction in effective thermal resistance of above-ground opaque *building* envelope assemblies permitted by Sentences (2) and (4) shall result in an RSI value that is not less than (a) 55% of that required in Article 9.36.2.6. for above-ground walls and joist-type roofs, and (b) 60% of that required in Article 9.36.2.6. for other opaque assemblies.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.2.11.(7)	9.36.2.11. Trade-off Options for Above-ground Building Envelope Components and Assemblies	(7) The effective thermal resistances of above-ground opaque assemblies with embedded heating cables, pipes or membranes are not permitted to be traded.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.2.11.(8)	9.36.2.11. Trade-off Options for Above-ground Building Envelope Components and Assemblies	(8) The effective thermal resistances of doors and access hatches described in Sentences 9.36.2.7.(3) to (7) are not permitted to be traded.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3. HVAC Requirements					#N/A	
9.36.3.1.(1)	9.36.3.1. Scope and Application	(1) This Subsection is concerned with the efficient use of energy by systems and equipment used for heating, ventilating and air-conditioning (HVAC).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.1.(2)	9.36.3.1. Scope and Application	(2) Where HVAC systems, equipment or techniques other than those described in this Subsection are used, the *building* shall be designed and constructed in accordance with the energy efficiency requirements of the NECB.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.2.(1)	9.36.3.2. Equipment and Ducts	(1) HVAC systems shall be sized in accordance with good practice as described in Sections 9.32. and 9.33.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.2.(2)	9.36.3.2. Equipment and Ducts	(2) Ducts shall be designed and installed in accordance with Sections 9.32. and 9.33.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.2.(3)	9.36.3.2. Equipment and Ducts	(3) Except for *exhaust ducts* leading directly to the exterior, ducts and *plenums* carrying conditioned air and located outside the plane of insulation shall (a) except as provided in Sentence (4), have all joints sealed against air infiltration and exfiltration with (i) sealants or gaskets made from liquids, mastics or heat-applied materials, (ii) mastic with embedded fabric, or (iii) foil-faced butyl tape, and (b) except as provided in Sentence (5), be insulated to the same level as required in Subsection 9.36.2. for exterior above-ground walls.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.2.(4)	9.36.3.2. Equipment and Ducts	(4) Fabric-backed tape with rubber adhesives shall not be used as a primary sealant to meet the requirements of Clause (3)(a).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.2.(5)	9.36.3.2. Equipment and Ducts	(5) The underside of rectangular ducts installed under an insulated floor over an unconditioned space is permitted to be insulated to a lower level than required in Sentence (3) but not to less than 2.11 (m^2×K)/W, provided both sides of such ducts are insulated to a compensating higher thermal resistance so that the resulting heat loss does not exceed that of ducts complying with Sentence (3).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.3.(1)	9.36.3.3. Air Intake and Outlet Dampers	(1) Except as provided in Sentences (3) and (4), every duct or opening intended to discharge air to the outdoors shall be equipped with (a) a motorized damper, or (b) a gravity- or spring-operated backflow damper.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.3.(2	9.36.3.3. Air Intake and Outlet Dampers	(2) Except as provided in Sentences (3) and (4) and except in locations with fewer than 3500 heating degree-days as listed in ~~Appendix C~~ ~~Supplementary Standard SB-1~~, ~~every outdoor air intake duct or opening shall be equipped with a motorized damper that remains in the "open" position if the damper fails.~~	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.3.(3)	9.36.3.3. Air Intake and Outlet Dampers	(3) Where other regulations are in effect that do not permit dampers, air intakes and outlets need not comply with Sentences (1) and (2).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.3.3.(4)	9.36.3.3. Air Intake and Outlet Dampers	(4) Air intakes and outlets serving HVAC systems that are required to operate continuously need not comply with Sentences (1) and (2).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.4.(1)	9.36.3.4. Piping for Heating and Cooling Systems	(1) Piping for heating and cooling systems shall be designed and installed in accordance with Subsection 6.2.9.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.4.(2)	9.36.3.4. Piping for Heating and Cooling Systems	(2) Except for high-temperature refrigerant piping, all piping forming part of a heating or air-conditioning system shall be located (a) inside the plane of insulation, or (b) within or outside the plane of insulation, provided the piping is insulated to a thermal resistance not less than that required in Subsection 9.36.2. for exterior above-ground walls.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.5.(1)	9.36.3.5. Equipment for Heating and Air-conditioning Systems	(1) Equipment for heating and air-conditioning systems shall be located (a) inside the plane of insulation, or (b) outdoors or in an unconditioned space, provided the equipment is designated by the manufacturer for such installation.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.6.(1)	9.36.3.6. Temperature Controls	(1) Except for manually fuelled solid-fuel-fired *appliances*, the supply of heating and cooling energy to each *dwelling unit*, *suite* or common space shall be controlled by thermostatic controls that activate the appropriate supply when the temperature in a *conditioned space* fluctuates ±0.5°C from the set-point temperature for that space.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.6.(2)	9.36.3.6. Temperature Controls	(2) Where heating and cooling systems are controlled by separate thermostatic controls, means shall be provided to prevent these controls from simultaneously calling for heating and cooling.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.6.(3)	9.36.3.6. Temperature Controls	(3) Space temperature control devices used to control unitary electric resistance *space heaters* shall conform to CAN/CSA-C828, "Performance requirements for thermostats used with individual room electric space heating devices."	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.6.(4)	9.36.3.6. Temperature Controls	(4) Controls required by Sentence (1) shall be designed such that lowering the set-point temperature on the thermostat for the heating system will not cause cooling energy to be expended to reach the lowered setting, and raising the set-point temperature on the thermostat for the cooling system will not cause heating energy to be expended to reach the raised setting.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.6.(5)	9.36.3.6. Temperature Controls	(5) Automatic devices or manually operated dampers, valves or switches shall be provided, as appropriate for the heating system used, to allow the heating of each zone to be adjusted.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.6.(6)	9.36.3.6. Temperature Controls	(6) Heat pumps equipped with supplementary heaters shall incorporate controls to prevent supplementary heater operation when the heating load can be met by the heat pump alone, except during defrost cycles.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.6.(7)	9.36.3.6. Temperature Controls	(7) Heat pumps with a programmable thermostat shall be equipped with setback controls that will temporarily suppress electrical back-up or adaptive anticipation of the recovery point, in order to prevent the activation of supplementary heat during the heat pump's recovery.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.7.(1)	9.36.3.7. Humidification	(1) Where an HVAC system is equipped with a means for adding moisture to maintain specific humidity levels, an automatic humidity control device shall be provided.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.8.(1)	9.36.3.8. Heat Recovery from Dehumidification in Spaces with an Indoor Pool or Hot Tub	(1) Except as provided in Sentences (2) and (3), spaces containing an indoor pool or hot tub shall be equipped with air exhaust systems conforming to Sentence (4) at design conditions. (See also Article 9.25.4.2.)	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.3.8.(2)	9.36.3.8. Heat Recovery from Dehumidification in Spaces with an Indoor Pool or Hot Tub	(2) Spaces containing an indoor pool need not comply with Sentence (1), provided a stationary mechanical or desiccant dehumidification system is installed that provides at least 80% of the dehumidification that would result from compliance with Sentence (1).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.8.(3)	9.36.3.8. Heat Recovery from Dehumidification in Spaces with an Indoor Pool or Hot Tub	(3) Spaces containing an indoor pool or hot tub having a total water surface area of less than 10 m^2 need not comply with Sentence (1), provided they are equipped with a cover having a nominal thermal resistance not less than 2.1 (m^2×K)/W.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.8.(4)	9.36.3.8. Heat Recovery from Dehumidification in Spaces with an Indoor Pool or Hot Tub	(4) Heat-recovery systems used to meet the requirements of Sentence (1) shall (a) be capable of recovering at least 40% of the sensible heat from exhausted air when tested in accordance with AHRI 1060 (I-P), "Performance Rating of Air-to-Air Exchangers for Energy Recovery Ventilation Equipment,", or (b) have a sensible-heat-recovery efficiency complying with Sentence 9.36.3.9.(3) when tested in accordance with CAN/CSA-C439, "Standard laboratory methods of test for rating the performance of heat/energy-recovery ventilators."	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.8.(5)	9.36.3.8. Heat Recovery from Dehumidification in Spaces with an Indoor Pool or Hot Tub	(5) The sensible heat, in kW, referred to in Clause (4)(a), which is the sensible heat content of the total quantity of exhausted air, shall be calculated as follows: Sensible Heat = 0.00123 x Q x (Te – To) where Te = temperature of exhausted air before heat recovery, in °C, To = outdoor 2.5% January design temperature as listed in ~~Appendix C Supplementary Standard SB-1, in °C, and Q = rated capacity of exhaust system at normal temperature of exhausted air, in L/s.~~	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.9.(1)	9.36.3.9. Heat Recovery from Ventilation Systems	(1) This Article applies where a self-contained mechanical ventilation system is installed whose principal exhaust component is equipped with heat-recovery capability.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.9.(2)	9.36.3.9. Heat Recovery from Ventilation Systems	(2) Where an integrated mechanical system (IMS) with a heat-recovery ventilator provides the principal exhaust ventilation, the IMS shall (a) be tested in accordance with CSA P.10, "Performance of Integrated Mechanical Systems for Residential Heating and Ventilation," and (b) have a minimum overall thermal performance factor conforming to Table 9.36.3.10.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.9.(3)	9.36.3.9. Heat Recovery from Ventilation Systems	(3) When tested in conformance with the low-temperature thermal and ventilation test methods described in CAN/CSA-C439, "Standard laboratory methods of test for rating the performance of heat/energy-recovery ventilators," heat-recovery ventilators described in Sentence (1) shall have a sensible heat-recovery efficiency of (a) at least 60% at an outside air test temperature of 0°C for locations with a 2.5% January design temperature greater than or equal to – 10°C, and (b) at least 60% at an outside air test temperature of 0°C and at least 55% at an outside air test temperature of –25°C for locations with a 2.5% January design temperature less than –10°C.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.9.(4)	9.36.3.9. Heat Recovery from Ventilation Systems	(4) The requirements of Sentence (3) shall be met using a principal ventilation rate not less than that required in Section 9.32.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.10.(1)	9.36.3.10. Equipment Efficiency	(1) HVAC equipment and components shall comply with the performance requirements stated in Table 9.36.3.10. (Please see the National PCF for the table for energy efficiency values)	https://www.dropbox.com/s/htnza06tb0d8r0h/Proposed_Change_1596.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.10.(2)	9.36.3.10. Equipment Efficiency	(2) Natural gas and propane fireplaces shall be (a) direct-vent (sealed), and (b) pilot-on-demand, interrupted or intermittent ignition systems without a standing pilot light.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.10.(3)	9.36.3.10. Equipment Efficiency	(3) The heat source component of combined space- and service water heating systems that are not within the scope of CAN/CSA-P.9, "Test method for determining the performance of combined space and water heating systems (combos)," shall meet the performance requirements stated in Table 9.36.3.10. for the applicable equipment type.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.3.11.(1)	9.36.3.11. Solar Thermal Systems	(1) Space-heating systems that use solar thermal technology shall conform to the manufacturer's design requirements and installation procedures.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.11.(2)	9.36.3.11. Solar Thermal Systems	(2) Service water heating systems that use solar thermal technology shall be installed in accordance with ~~the NPC Part 7~~.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.3.11.(3)	9.36.3.11. Solar Thermal Systems	(3) Hot water storage tanks associated with the systems referred to in Sentence (2) shall be installed in a *conditioned space* .	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4. Service Water Heating Systems						
9.36.4.1.(1)	9.36.4.1. Scope and Application	(1) This Subsection is concerned with the efficient use of energy by systems used to heat service water for household use as well as for indoor pools and hot tubs.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4.1.(2)	9.36.4.1. Scope and Application	(2) Where service water heating equipment or techniques other than those described in this Subsection are used, the *building* shall be designed and constructed in accordance with the energy efficiency requirements of the NECB.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4.2.(1)	9.36.4.2. Equipment Efficiency	(1) *Service water heaters* , *boilers* , pool heaters and storage tanks shall comply with the performance requirements stated in Table 9.36.4.2.	https://www.dropbox.com/s/hn3pmhbc5tegbgy/Proposed_.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Support update to current standards. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4.2.(2)	9.36.4.2. Equipment Efficiency	(2) Hot service water storage tanks not listed in Table 9.36.4.2. shall be covered with insulation having a minimum thermal resistance of 1.8 (m^2×K)/W.	https://www.dropbox.com/s/hn3pmhbc5tegbgy/Proposed_.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Support update to current standards. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4.2.(3)	9.36.4.2. Equipment Efficiency	(3) Except for components that are required to be installed outdoors, service water heating equipment shall be installed in a *conditioned space* .	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4.3.(1)	9.36.4.3. Solar Domestic Hot Water Systems	(1) Service water heating systems that use solar thermal technology shall conform to the manufacturer's design requirements and installation procedures.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4.3.(2)	9.36.4.3. Solar Domestic Hot Water Systems	(2) Service water heating systems that use solar thermal technology shall be installed in accordance with the NPC.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4.3.(3)	9.36.4.3. Solar Domestic Hot Water Systems	(3) Hot water storage tanks associated with the systems referred to in Sentence (2) shall be installed in a *conditioned space* .	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4.4.(1)	9.36.4.4. Piping	(1) The first 2 m of outlet piping downstream and of inlet piping upstream leading from a storage tank or heating vessel shall be covered with piping insulation that is at least 12 mm thick.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4.4.(2)	9.36.4.4. Piping	(2) All piping forming part of a continuously operating recirculating service water heating system shall be covered with piping insulation that is at least 12 mm thick.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.4.4.(3)	9.36.4.4. Piping	(3) Where piping forming part of the service water heating system is located outside the *building* envelope or in an unconditioned space, it shall be insulated to a thermal resistance not less than the effective thermal resistance required for the exterior above-ground walls.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4.5.(1)	9.36.4.5. Controls	(1) Service water heating systems with storage tanks shall be equipped with automatic temperature controls capable of adjustment between the minimum and maximum temperature settings permitted for the intended use.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4.6.(1)	9.36.4.6. Indoor Swimming Pool Equipment Controls	(1) Heaters for indoor swimming pools shall be equipped with (a) a thermostat, and (b) a readily accessible and clearly labeled device that allows the heater to be shut off without adjusting the thermostat setting.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.4.6.(2)	9.36.4.6. Indoor Swimming Pool Equipment Controls	(2) Pumps and heaters for indoor swimming pools shall be equipped with time switches or other types of controls that can be set to automatically turn off the pumps and heaters when their operation is not required.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5. Energy Performance Compliance						
9.36.5.1.(1)	9.36.5.1. Scope and Application	(1) This Subsection is concerned with modeling the energy performance of components, systems and assemblies, including heat gains from internal loads described in Sentence 9.36.5.4.(4), that are addressed in the scope of the prescriptive requirements in Subsections 9.36.2. to 9.36.4. and that are installed in *buildings* described in Sentence 9.36.1.3.(3).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.1.(2)	9.36.5.1. Scope and Application	(2) Internal loads other than those described in Sentence 9.36.5.4.(4) shall be excluded from the performance compliance calculations as they relate to (a) the lighting of unconditioned spaces, (b) exterior lighting, and (c) the ventilation of unconditioned spaces.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.2.(1)	9.36.5.2. Definitions	(1) For the purpose of this Subsection, the term “reference house” shall mean a hypothetical replica of the proposed house design using the same energy sources for the same functions and having the same environmental requirements, *occupancy*, climatic data and operating schedules, but made to comply with all applicable prescriptive requirements of Subsections 9.36.2. to 9.36.4.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.2.(2)	9.36.5.2. Definitions	(2) For the purpose of this Subsection, the term “proposed house” shall mean a modelled replica of the actual house under consideration, in which some elements covered in Subsections 9.36.2. to 9.36.4. are specific to the actual house, while other elements not covered in those Subsections, but that are necessary for the calculation of the annual energy consumption, are assigned default values.	https://www.dropbox.com/s/7l4r4oioqy73mdk/Proposed_Change_1608.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Align wih ERS as per 9.36.5.3. Compliance. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.2.(3)	9.36.5.2. Definitions	(3) For the purpose of this Subsection, the term “annual energy consumption” shall mean the annual sum of service water heating and space-conditioning energy consumption of the proposed house design, as calculated in accordance with this Subsection.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.2.(4)	9.36.5.2. Definitions	(4) For the purpose of this Subsection, the term “house energy target” shall mean the annual energy consumption of the reference house, as calculated in accordance with this Subsection.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.2.(5)	9.36.5.2. Definitions	(5) For the purpose of this Subsection, the term “principal ventilation rate” shall mean the normal operating exhaust capacity of the principal ventilation fan as required by Article 9.32.3.4.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.3.(1)	9.36.5.3. Compliance	(1) The performance compliance calculations shall determine the annual energy consumption of the proposed house and the house energy target of a reference house in accordance with (a) this Subsection, or (b) the EnerGuide Rating System, version 15, and Sentence (2).	https://www.dropbox.com/s/7i6s9tj0vdcgmlv/Proposed_Change_1620.pdf?dl= 0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.3.(2)	9.36.5.3. Compliance	(2) The annual energy consumption of the proposed house shall not exceed the house energy target of the reference house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.5.3.(3)	9.36.5.3. Compliance	(3) In establishing the house energy target, *building* components, systems and assemblies shall be accounted for in accordance with the prescriptive requirements of Subsections 9.36.2. to 9.36.4. for the climate zone under consideration.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.3.(4)	9.36.5.3. Compliance	(4) In establishing the annual energy consumption, *building* components, systems and assemblies that are addressed in the scope of the prescriptive requirements of Subsections 9.36.2. to 9.36.4. shall be accounted for the climate zone under consideration.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.3.(5)	9.36.5.3. Compliance	(5) Where the construction techniques or *building* components, systems or assemblies used are more energy-efficient than those prescribed by the prescriptive requirements, the performance compliance calculations are permitted to take this increased performance level into account in the determination of the annual energy consumption, provided it can be quantified and is not dependent on occupant interaction.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.3.(6)	9.36.5.3. Compliance	(6) Both the proposed and reference houses shall be modeled using the same climatic data, *soil* conditions, operating schedules in Article 9.36.5.4. and temperature set-points.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.4.(1)	9.36.5.4. Calculation Methods	(1) Except as provided in Sentence (2), the energy model calculations shall account for the annual energy consumption of systems and equipment required for (a) space heating, (b) ventilation, (c) service water heating, and (d) where installed, space cooling.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.4.(2)	9.36.5.4. Calculation Methods	(2) Redundant or back-up equipment for the systems and equipment listed in Sentence (1) is permitted to be excluded from the energy model, provided it is equipped with controls and is not required to meet the space-conditioning load of the house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.4.(3)	9.36.5.4. Calculation Methods	(3) The schedules used in the energy model shall (a) be based on a time interval not greater than one hour, where the energy model evaluates the performance of the house over hourly intervals, or (b) be applied in an hourly-bin model then averaged, where the energy model does not evaluate the performance of the house over hourly	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.4.(4)	9.36.5.4. Calculation Methods	(4) The energy model calculations shall account for the loads due to heat gains from occupants, lighting and miscellaneous equipment, which shall be fixed for every day of the year, by (a) following the schedule provided in Table 9.36.5.4., and (b) increasing the loads for each hour by 3.58 W per square metre of floor area in common spaces, if applicable.	https://www.dropbox.com/s/7l4r4oioqy73mdk/Proposed_Change_1608.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Align with ERS measurements. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.4.(5)	9.36.5.4. Calculation Methods	(5) The energy model calculations shall account for the following space-heating temperature set-points: (a) in all living spaces above the *basement* , (b) 19°C in *basements* and common spaces, and (c) 15°C in crawl spaces intended to be *conditioned spaces* .	https://www.dropbox.com/s/7l4r4oioqy73mdk/Proposed_Change_1608.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Align with ERS measurements. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.4.(6)	9.36.5.4. Calculation Methods	(6) The energy model calculations shall account for a space-cooling temperature set-point of 25°C in all *conditioned spaces* served by the cooling system.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.4.(7)	9.36.5.4. Calculation Methods	(7) The energy model calculations shall account for a thermostatic control that responds to fluctuations of ±0.5°C from the temperature set- point.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.4.(8)	9.36.5.4. Calculation Methods	(8) If a computer program is used to carry out the compliance calculations, the calculation methods employed in the energy model shall (a) be used for both the reference and proposed houses, and (b) be tested in accordance with ANSI/ASHRAE 140, "Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs," with variations in the computer program from the range recommended	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.5.4.(9)	9.36.5.4. Calculation Methods	(9) The proposed and reference houses shall both be modeled using the same approach and assumptions, except where *building* components or energy efficiency features are permitted by this Subsection to be different.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.4.(10)	9.36.5.4. Calculation Methods	(10) The energy model calculations shall account for the effect of airtightness in accordance with Sentence 9.36.5.10.(10) or (11), as applicable.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.4.(11)	9.36.5.4. Calculation Methods	(11) The energy model calculations shall account for heat transfer through elements separating *conditioned space* from unconditioned space, the exterior or the ground.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.5.(1)	9.36.5.5. Climatic Data	(1) To calculate the effect of heating and cooling consumption, the energy model calculations shall be performed using climatic data measured at time intervals no greater than one hour for one year (8 760 hours) based on the average of at least 10 years of measured data collected at the weather station nearest to the region in which the proposed house is located.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.5.(2)	9.36.5.5. Climatic Data	(2) For urban regions with several climatic data sets and for locations for which climatic data are not available, the energy model calculations shall be performed using climatic data that best represent the climate at the *building* site.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.5.(3)	9.36.5.5. Climatic Data	(3) The energy model calculations shall account for ground reflectance by (a) increasing ground reflectance due to snow cover in a ratio of 30% without snow cover and 70% with snow cover, or (b) taking into account changes in ground reflectance throughout the heating season.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.6.(1)	9.36.5.6. Building Envelope Calculations	(1) For each hour of the year, the energy model calculations shall account for heat transfer through wall assemblies, roof-ceiling assemblies, including attics where applicable, and exposed floor assemblies due to the thermal characteristics of the particular assembly and thermal bridging.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.6.(2)	9.36.5.6. Building Envelope Calculations	(2) The following *building* envelope assemblies and components shall be addressed in the energy model calculations: (a) above-ground walls and roof-ceiling assemblies, (b) floors and walls in contact with the ground, and (c) doors, windows and skylights.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.6.(3)	9.36.5.6. Building Envelope Calculations	(3) For each wall assembly, fenestration component, roof-ceiling assembly and exposed floor assembly, the energy model calculations shall account for (a) the area of the interior side of the insulated surface, (b) emissivity, and (c) the effective thermal resistance or overall thermal transmittance, as applicable.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.6.(4)	9.36.5.6. Building Envelope Calculations	(4) The energy model calculations shall account for the effect that each assembly in contact with the ground has on below-*grade* heat transfer due to (a) the geometry of the *foundation*, (b) *soil* conditions, and (c) the configuration of the insulation.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.6.(5)	9.36.5.6. Building Envelope Calculations	(5) The energy model calculations shall account for heat transfer through fenestration separating *conditioned spaces* from the outdoors, including skylights, while accounting for both temperature difference and transmission of solar radiation based on (a) orientation as a function of azimuth and tilt of the surface, (b) area of frame opening and glazed area, (c) overall thermal transmittance, and (d) solar heat gain coefficient.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.6.(6)	9.36.5.6. Building Envelope Calculations	(6) Where the energy model calculations account for the effect of thermal mass, the contents of the house shall be excluded.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.5.6.(7)	9.36.5.6. Building Envelope Calculations	(7) The energy model calculations shall account for the presence of thermally active walls, floors and ceilings with embedded conditioning systems that form part of the *building* envelope.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.6.(8)	9.36.5.6. Building Envelope Calculations	(8) Where skylights are installed in the roof, the gross roof area shall be determined in accordance with Sentence 9.36.2.3.(1).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.6.(9)	9.36.5.6. Building Envelope Calculations	(9) Skylights shall be considered to have no shading.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.6.(10)	9.36.5.6. Building Envelope Calculations	(10) The energy model calculations shall account for the effects of exterior permanent and fixed shading only on solar heat gain from fenestration.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.6.(11)	9.36.5.6. Building Envelope Calculations	(11) The ratio of fenestration area to opaque area of doors shall be the same for the proposed and reference houses.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.7.(1)	9.36.5.7. HVAC System Calculations	(1) The energy model calculations shall account for the energy consumption of each heating, ventilating and, where installed, cooling system for each hour of the year.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.7.(2)	9.36.5.7. HVAC System Calculations	(2) Each heating system and, where installed, cooling system shall be accounted for separately in the energy model calculations.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.7.(3)	9.36.5.7. HVAC System Calculations	(3) *Conditioned spaces* in both the reference and proposed houses shall be modeled as being (a) heated, where only heating systems are provided in the proposed house, (b) cooled, where only cooling systems are provided in the proposed house, or (c) heated and cooled, where complete heating and cooling systems are provided in the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.7.(4)	9.36.5.7. HVAC System Calculations	(4) The performance requirements stated in Table 9.36.3.10. shall be used in the energy model calculations.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.7.(5)	9.36.5.7. HVAC System Calculations	(5) Where duct and piping losses are accounted for in the energy model calculations, they shall be included for both the proposed and reference houses and calculated the same way for both houses.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.7.(6)	9.36.5.7. HVAC System Calculations	(6) The same time periods shall be used in the simulation of the operation of the ventilation system for both the proposed and reference houses.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.7.(7)	9.36.5.7. HVAC System Calculations	(7) During the heating season, any solar and internal heat gains that cause an increase in space temperature beyond 5.5°C above the setpoint shall be (a) excluded from the energy model calculations, or (b) calculated as being vented from the house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.7.(8)	9.36.5.7. HVAC System Calculations	(8) The energy model calculations shall account for the part-load performance of equipment, including electrical consumption.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.5.7.(9)	9.36.5.7. HVAC System Calculations	(9) The energy model calculations shall account for the heat-recovery efficiency of heat-recovery ventilators using a minimum of 2 data test points derived from testing in accordance with Clause 9.36.3.9.(3)(a) or (b), as applicable.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.8.(1)	9.36.5.8. Service Water Heating System Calculations	(1) The energy model calculations shall account for the energy consumption of all service water heating systems.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.8.(2)	9.36.5.8. Service Water Heating System Calculations	(2) The performance requirements stated in Table 9.36.4.2. shall be used in the energy model calculations.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.8.(3)	9.36.5.8. Service Water Heating System Calculations	(3) Where piping or standby losses are accounted for in the energy model calculations, they shall be included for both the proposed and reference houses, including their effect on space heating and cooling, and calculated the same way for both houses.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.8.(4)	9.36.5.8. Service Water Heating System Calculations	(4) The energy model calculations shall use a supply cold water temperature, in °C, that is (a) equal to –0.002 (HDD) + 20.3, where HDD < 7 999, (b) equal to 4.3, where HDD ≥ 8 000, or (c) determined based on the ground and air temperatures in the climatic data file.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.8.(5)	9.36.5.8. Service Water Heating System Calculations	(5) Except as provided in Sentence (8), the energy model calculations shall use a service water delivery temperature of 55°C.	https://www.dropbox.com/s/7l4r4oioqy73mdk/Proposed_Change_1608.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Align with ERS measurements. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.8.(6)	9.36.5.8. Service Water Heating System Calculations	(6) For service hot water usage other than for showering, the energy model calculations shall take into account the service water heating use schedule presented in Table 9.36.5.8. using a load of (a) 97 L/ day for houses without a *secondary suite* , or (b) 65 L/day for each *dwelling unit* in residential *buildings* with two or more *dwelling units* .	https://www.dropbox.com/s/7l4r4oioqy73mdk/Proposed_Change_1608.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Align with ERS measurements. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.8.(7)	9.36.5.8. Service Water Heating System Calculations	(7) The energy model calculations shall take into account daily service hot water usage for showering (a) at 7 a.m. for 15 mins for houses without a *secondary suite* , or (b) at 7 a.m. for 10 mins for each *dwelling unit* in residential *buildings* with two or more *dwelling units* .	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.8.(8)	9.36.5.8. Service Water Heating System Calculations	(8) The energy model shall set the service water delivery temperature for showering to 41°C at the shower head, with a flow rate of 7.6 L/min.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.9.(1)	9.36.5.9. General Requirements for Modeling the Proposed House	(1) Except where permitted by Articles 9.36.5.10. to 9.36.5.12., the energy model calculations for the proposed house shall be consistent with the proposed construction specifications for that house with regard to (a) fenestration and opaque *building* envelope assembly type, effective thermal resistance and areas, (b) HVAC system types and capacities, and (c) service water heating system types and capacities.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.10.(1)	9.36.5.10. Modeling Building Envelope of Proposed House	(1) Except as provided in Sentences (2) and (3), the energy model calculations for the proposed house shall be consistent with the proposed construction specifications for that house with regard to (a) the area of the above-ground portion of *foundation* walls, (b) the effective thermal resistance of above-ground walls, ceilings below attics, roof assemblies and *rim joists* , (c) the maximum overall thermal transmittance of doors, as calculated in accordance with Sentence 9.36.2.2.(3), (d) the effective thermal resistance of below-ground walls and slabs-on-ground, (e) exterior walls, roof-ceiling assembly, doors, walls, exposed floors, and floors in contact with the ground, (f) distribution, orientation and area of fenestration and doors, as calculated in accordance with Article 9.36.2.3., (g) solar heat gain coefficient and overall thermal transmittance of fenestration, as calculated in accordance with Sentence 9.36.2.2.(3), (h) configuration of insulation in assemblies in contact with the ground, and (i) effective thermal resistance of *foundation* walls.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.5.10.(2)	9.36.5.10. Modeling Building Envelope of Proposed House	(2) Except for penetrations, slab-on-ground edge insulation and assemblies with embedded heating pipes, where a *building* envelope component or assembly covers less than 2% of the total area of the assembly type to which it belongs, its thermal characteristics are not required to be calculated as belonging to a distinct assembly, provided the area of the component or assembly is included in an adjacent assembly having the same orientation.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.10.(3)	9.36.5.10. Modeling Building Envelope of Proposed House	(3) *Building* envelope assemblies with the same thermal characteristics and orientation are not required to be calculated as distinct assemblies, provided their area is included in an adjacent assembly.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.10.(4)	9.36.5.10. Modeling Building Envelope of Proposed House	(4) *Building* envelope assemblies and components separating *conditioned space* from enclosed unconditioned space shall have a solar heat gain coefficient equal to 0.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.10.(5)	9.36.5.10. Modeling Building Envelope of Proposed House	(5) Except as stated in Sentence 9.36.5.6.(9), the energy model calculations for the proposed house shall account for the effects of exterior permanent and fixed shading devices, including fins, overhangs, and light shelves, on solar heat gain.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.10.(6)	9.36.5.10. Modeling Building Envelope of Proposed House	(6) Where thermal mass is included in the energy model calculations for the proposed house, it shall be set as (a) the specified mass up to the inside edge of insulation in exterior walls, the mass of interior walls, the mass up to the centre-line of *party walls* , and the mass of floors, as applicable, (b) the specified mass of the *building* envelope assembly, where the energy model calculations include a transient analysis of thermal transfer of the entire *building* envelope assembly, or (c) a default value of 0.060 MJ/m2×°C.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.10.(7)	9.36.5.10. Modeling Building Envelope of Proposed House	(7) Exterior walls, roofs and exposed floors shall have a solar absorptance of 0.4.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.10.(8)	9.36.5.10. Modeling Building Envelope of Proposed House	(8) The orientation of the *foundation* of the proposed house as constructed shall be within 22.5° of the orientation used in the energy model calculations.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.10.(9)	9.36.5.10. Modeling Building Envelope of Proposed House	(9) The airtightness used in the energy model calculations for the proposed house shall be a) 3.2 air changes per hour at 50 Pa pressure differential with a pressure exponent of 0.67, where the construction complies with Section 9.25., b) 2.5 air changes per hour at 50 Pa pressure differential with a pressure exponent of 0.67, where it can be shown that the air barrier system is constructed in accordance with Subsection 9.25.3. and Articles 9.36.2.9. and 9.36.2.10., or (a) the same as the reference house if airtightness test is not conducted (b) the airtightness is determined in accordance with Sentence 9.36.8.3.(1) expressed as (i) the number of air changes per hour at 50 Pa pressure differential with a pressure exponent determined through a multi-point test, and (ii) the equivalent leakage area.	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.10.(10)	9.36.5.10. Modeling Building Envelope of Proposed House	(10) For compliance with Clause (9)(c), a design airtightness value shall be assigned for use in the energy model until the actual airtightness has been measured.	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.5.10.(11)	9.36.5.10. Modeling Building Envelope of Proposed House	(11) Where measured airtightness is used in the energy model calculations, it shall be determined in accordance with CAN/CGSB-149.10, “Determination of the airtightness of building envelopes by the fan depressurization method,” a) as written, or b) excluding Clause 6.1.6, which allows intentional openings for mechanical equipment to be left unsealed.	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.10.(12)	9.36.5.10. Modeling Building Envelope of Proposed House	(12) Where airtightness is determined in accordance with Sentence (11) using air changes per hour, the result obtained at an air pressure differential of 50 Pa shall be used in the energy model calculations.	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.10.(13)	9.36.5.10. Modeling Building Envelope of Proposed House	(13) Where airtightness is determined in accordance with Clause (11)(b), its rate shall be adjusted in the energy model calculations to account for air leakage through mechanical equipment.	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(1)	9.36.5.11. Modeling HVAC System of Proposed House	(1) Where multiple HVAC systems serve a single space, the energy model calculations for the proposed house shall call each system in the order of priority established by the system control in the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(2)	9.36.5.11. Modeling HVAC System of Proposed House	(2) Where a heat pump is included in the proposed house, the energy model calculations shall include (a) the effect of the source temperature on the heat pump’s efficiency, and (b) the temperature at which the heat pump shuts down.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(3)	9.36.5.11. Modeling HVAC System of Proposed House	(3) Permanent supplementary heating systems that are operated by a thermostat or automatic control shall be included in the energy model calculations for the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(4)	9.36.5.11. Modeling HVAC System of Proposed House	(4) The performance characteristics of the heat-recovery ventilation system of the proposed house shall be as specified at not less than the principal ventilation rate required for a system designed in accordance with Section 9.32.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(5)	9.36.5.11. Modeling HVAC System of Proposed House	(5) The ventilation system shall be modeled as operating 8 hours a day at the principal ventilation rate.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(6)	9.36.5.11. Modeling HVAC System of Proposed House	(6) The energy model calculations shall determine the required principal ventilation rate, in L/s, in accordance with Article 9.32.3.4. based on the number of bedrooms in the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(7)	9.36.5.11. Modeling HVAC System of Proposed House	(7) The energy model calculations may include duct and piping losses, taking into account the properties of the specified duct and piping insulation of the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(8)	9.36.5.11. Modeling HVAC System of Proposed House	(8) The energy model calculations shall include a heating system and, where installed, a cooling system sized according to the specifications for the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(9)	9.36.5.11. Modeling HVAC System of Proposed House	(9) The energy model calculations shall include the effect of part-load performance of equipment using (a) the same modeled part-load performance data used for the reference house as per Clause 9.36.5.15.(6)(a), (b) the default part-load performance characteristics stated in Clause 9.36.5.15.(6)(b), or (c) measured data for the specified equipment.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(10)	9.36.5.11. Modeling HVAC System of Proposed House	(10) Where a heat-recovery ventilator is installed in the proposed house, the energy model calculations shall only account for the recovery of sensible heat using the efficiency ratings in Sentence 9.36.3.9.(3).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.5.11.(11)	9.36.5.11. Modeling HVAC System of Proposed House	(11) Except as provided in Sentence (12), where a forced-air system is installed in the proposed house, the energy model calculations shall assume the circulation fan operates when the heating, cooling or principal ventilation system is operating.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(12)	9.36.5.11. Modeling HVAC System of Proposed House	(12) Where a forced-air system is installed in the proposed house and where the principal ventilation system in the proposed house is a separate, fully ducted ventilation system, the energy model calculations shall assume the circulation fan operates only when the heating or cooling system is operating.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(13)	9.36.5.11. Modeling HVAC System of Proposed House	(13) Where the proposed house contains multiple HVAC systems, the circulation fan power shall be the sum of the circulation fan power capacity of each system.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(14)	9.36.5.11. Modeling HVAC System of Proposed House	(14) The ventilation fan power consumption shall be modeled (a) as being 2.32 W/L/s for each ventilation fan on the exhaust side and, where applicable, on the supply side, or (b) as specified, where a heat-recovery ventilator is used.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(15)	9.36.5.11. Modeling HVAC System of Proposed House	(15) Where a forced-air system is installed in the proposed house, the energy model calculations shall determine the flow rate, in L/s, of the circulation fan in the reference house by multiplying the capacity, in W, of the heating system in the proposed house by (a) 0.0604 for heat pumps, and	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(16)	9.36.5.11. Modeling HVAC System of Proposed House	(16) Where a forced-air system is installed in the proposed house, the energy model calculations shall determine the minimum electricity requirement, in W, of the circulation fan by multiplying the flow rate, in L/s, of the circulation fan in the reference house, determined in accordance with Sentence (15), by a factor of 2.30.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(17)	9.36.5.11. Modeling HVAC System of Proposed House	(17) Where a forced-air system is installed in the proposed house, the flow rate of the circulation fan shall be modeled as being the larger of (a) the flow rate of the circulation fan of the reference house, determined in accordance with Sentence (15), or (b) the flow rate of the circulation fan for the forced-air system specified in the design for the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(18)	9.36.5.11. Modeling HVAC System of Proposed House	(18) Except as provided in Sentence (19), where a forced-air system is installed in the proposed house, the power capacity of the circulation fan shall be modeled as specified in the design for the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(19)	9.36.5.11. Modeling HVAC System of Proposed House	(19) Where the design for the proposed house specifies a forced-air system with a circulation fan flow rate that is lower than the flow rate of the circulation fan in the reference house, as determined in accordance with Sentence (15), the electricity capacity, in W, of the circulation fan shall be modeled as being the larger of (a) the electricity capacity specified for the circulation fan in the proposed forced-air system, or (b) the minimum circulation fan electricity capacity determined in accordance with Sentence (16).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.11.(20)	9.36.5.11. Modeling HVAC System of Proposed House	(20) For natural gas-, oil-, propane- and wood-burning heating systems, the energy model calculations shall set the auxiliary electricity requirements, including that of combustion fans, to those specified for the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.12.(1)	9.36.5.12. Modeling Service Water Heating System of Proposed House	(1) The service water heating system used in the energy model calculations shall be sized as specified in the design for the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.5.12.(2)	9.36.5.12. Modeling Service Water Heating System of Proposed House	(2) The energy model calculations may include (a) piping losses, and (b) drain-water heat recovery, provided (i) the calculation of the heat recovered is based on the performance of the drain-water heat-recovery unit specified, as determined in accordance with CSA B55.1, "Test method for measuring efficiency and pressure loss of drain water heat recovery units," using a drain-water inlet temperature of 35°C, and (ii) where there are one or two above-ground showers, all of them are served by the drain-water heat-recovery unit, and where there are more than two above-ground showers, at least two of them are served by the drain-water heat-recovery unit.	https://www.dropbox.com/s/7l4r4oioqy73mdk/Proposed_Change_1608.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Align with ERS measurements. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.13.(1)	9.36.5.13. General Requirements for Modeling the Reference House	(1) Except as provided in Sentence (2) and Articles 9.36.5.14. to 9.36.5.16., the energy model calculations for the reference house shall be consistent with the prescriptive requirements of Subsections 9.36.2. to 9.36.4. with regard to (a) fenestration and opaque *building* envelope assembly types and areas, (b) HVAC system types and capacities, and (c) service water heating system types and capacities.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.13.(2)	9.36.5.13. General Requirements for Modeling the Reference House	(2) The energy model calculations for the reference house shall include the same values as those used for the proposed house with regard to (a) *floor area* , (b) heated volume, and (c) number and types of rooms.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.14.(1)	9.36.5.14. Modeling Building Envelope of Reference House	(1) The energy model calculations for the reference house shall include the same values as those used for the proposed house with regard to (a) the gross area of above-ground portion of *foundation* walls, (b) *soil* conditions, (c) the orientation of the *foundation* , and (d) the ratio of fenestration area to opaque area of doors.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.14.(2)	9.36.5.14. Modeling Building Envelope of Reference House	(2) The energy model calculations for the reference house shall use the following set values: (a) 0.060 MJ/m2×°C for thermal mass, (b) a solar absorptance of 0.4 for the exterior walls, roofs and exposed floors, (c) 0.26 for the solar heat gain coefficient of fenestration, and (d) ~~2.53.0 air changes per hour for detached and 3.5 air changes per hour for attached at 50 Pa pressure differential for airtightness.~~ d) an airtightness of	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
		i) 3.0 air changes per hour at 50 Pa pressure differential for attached zones where airtightness used for the proposed house is determined in accordance with Sentence 9.36.8.3.(1) using the unguarded method, or ii) 2.5 air changes per hour at 50 Pa pressure differential otherwise, and (e) the pressure exponent used for the proposed house where this value is less than 0.67, otherwise, 0.67.		4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.14.(3)	9.36.5.14. Modeling Building Envelope of Reference House	(3) The effective thermal resistance and overall thermal transmittance values, as applicable, used in the energy model calculations for the reference house shall be determined for the applicable heating degree-day zone in accordance with (a) Table 9.36.2.6.-A for walls, ceilings below attics, roof assemblies and *rim joists* , (b) Table 9.36.2.7.-A for doors, and (c) Table 9.36.2.8.-A for below-*grade* walls and slabs-on-ground.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.14.(4)	9.36.5.14. Modeling Building Envelope of Reference House	(4) Except as provided in Sentences (5) and (6), the exterior walls, roof-ceiling assembly, doors, walls, exposed floors, and floors of the reference house that are in contact with the ground shall have the same area as those of the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.14.(5)	9.36.5.14. Modeling Building Envelope of Reference House	(5) The area and orientation of fenestration and doors of the reference house shall be modeled as being equally distributed on all sides of the house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.14.(6)	9.36.5.14. Modeling Building Envelope of Reference House	(6) The gross wall area and the area of fenestration and doors of the reference house shall be determined in accordance with Article 9.36.2.3.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.5.14.(7)	9.36.5.14. Modeling Building Envelope of Reference House	(7) Windows and other glazed components in the reference house shall have a maximum overall thermal transmittance as required in Table 9.36.2.7.-A for the applicable heating degree-day category.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.14.(8)	9.36.5.14. Modeling Building Envelope of Reference House	(8) The configuration of insulation in assemblies of the reference house that are in contact with the ground shall be modeled as conforming to Article 9.36.2.8.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.14.(9)	9.36.5.14. Modeling Building Envelope of Reference House	(9) *Foundation* walls shall be modeled using the applicable effective thermal resistance values in Table 9.36.2.8.-A and as conforming to Sentence 9.36.2.8.(2).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.14.(10)	9.36.5.14. Modeling Building Envelope of Reference House	(10) The fenestration and door area to gross wall area ratio (FDWR) of the reference house shall be (a) for houses containing 1 or 2 *dwelling units*, (i) as per the proposed house, where its FDWR is between 17% and 22%, (ii) 17%, where the FDWR of the proposed house is less than 17%, or (iii) 22%, where the FDWR of the proposed house is greater than 22%, and (b) for *buildings* of *residential occupancy* containing more than 2 *dwelling units*, (i) the FDWR determined in Clause (a) for the areas determined in accordance with Sentence 9.36.2.3.(2) and, where the FDWR determined in accordance with the calculation in Sentence 9.36.2.3.(3) only does not exceed 40%, or (ii) 40% of the gross wall area enclosing *conditioned space* where the area of fenestration and doors is greater than 40% of the gross wall area enclosing *conditioned space* determined in accordance with Sentence 9.36.2.3.(2).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(1)	9.36.5.15. Modeling HVAC System of Reference House	(1) Where multiple HVAC systems serve a single space, the energy model calculations for the reference house shall use the same order of priority as that used for the proposed house. (See Sentence 9.36.5.11.(1).)	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(2)	9.36.5.15. Modeling HVAC System of Reference House	(2) The energy model calculations for the reference house shall include the same features as those used for the proposed house with regard to (a) the principal heating and cooling energy sources, which are gas, electricity, oil, propane, wood or a heat pump, (b) the primary and secondary energy sources, which are gas, electricity, oil, propane, wood or a heat pump, and (c) the ventilation rate (see Sentence 9.36.5.11.(6)).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(3)	9.36.5.15. Modeling HVAC System of Reference House	(3) Except as required in Sentence 9.36.3.8.(1), the reference house shall be modeled without a heat-recovery ventilator.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(4)	9.36.5.15. Modeling HVAC System of Reference House	(4) The ventilation system shall be modeled as operating 8 hours a day.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(5)	9.36.5.15. Modeling HVAC System of Reference House	(5) The heating system and, where installed, the cooling system shall be sized in accordance with Article 9.33.5.1. with regard to total heat output capacity and nominal cooling capacity.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(6)	9.36.5.15. Modeling HVAC System of Reference House	(6) The part-load performance of HVAC equipment in the reference house shall be calculated using (a) modeled part-load performance characteristics, where applicable, or (b) the performance values for each type of system multiplied by an adjustment factor from Table 9.36.5.15.-A, 9.36.5.15.-B or 9.36.5.15.-C as follows: (i) for *furnaces*, by multiplying the *furnace* steady- state efficiency by the adjustment factor given in Table 9.36.5.15.-A, (ii) for heat pumps and air conditioners, by multiplying the heat pump steady- state coefficient of performance by the adjustment factor given in Table 9.36.5.15.-B, and (iii) for *boilers*, combination space- heating and service water heating systems, and integrated mechanical systems, by multiplying the net-full-load heating efficiency by the adjustment factor given in Table 9.36.5.15.-C.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Include table. Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.5.15.(7)	9.36.5.15. Modeling HVAC System of Reference House	(7) The performance of the HVAC equipment in the reference house shall be modeled (a) as conforming to Table 9.36.3.10. for the corresponding type, fuel source and capacity of equipment in the proposed house, or (b) where the HVAC equipment for the proposed house is not addressed in Table 9.36.3.10., as a gas warm-air *furnace* with a minimum performance rating of 92% annual fuel utilization efficiency.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(8)	9.36.5.15. Modeling HVAC System of Reference House	(8) Where a heat-recovery ventilator is installed in the reference house, the energy model calculations shall only account for the recovery of sensible heat using the efficiency ratings in Sentence 9.36.3.9.(3).	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(9)	9.36.5.15. Modeling HVAC System of Reference House	(9) The energy model calculations shall assume all ventilation and circulation fans required to be modeled in the reference house are equipped with permanent-split capacitor (PSC) motors.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(10)	9.36.5.15. Modeling HVAC System of Reference House	(10) Where a forced-air system is installed in the reference house, the energy model calculations shall assume the circulation fan operates when the heating, cooling or principal ventilation system is called for.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(11)	9.36.5.15. Modeling HVAC System of Reference House	(11) Where the reference house contains multiple HVAC systems, the circulation fan power shall be the sum of the circulation fan power capacity of each system.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(12)	9.36.5.15. Modeling HVAC System of Reference House	(12) The principal ventilation flow rate, in L/s, prescribed in Section 9.32. shall be multiplied by 2.32 W/L/s to determine the ventilation fan power capacity, in W, to be used in the energy model calculations for each fan on the exhaust side and, where applicable, on the supply side.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(13)	9.36.5.15. Modeling HVAC System of Reference House	(13) Where a heat-recovery ventilator is required in the reference house in accordance with Article 9.36.3.8., the ventilation flow rate, in L/s, in the zone served by the pool or hot tub shall be multiplied by 4.18 W/L/s to determine the heat-recovery ventilator power, in W, to be used in the energy model calculations.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(14)	9.36.5.15. Modeling HVAC System of Reference House	(14) Where a forced-air system is installed in the reference house, the system's capacity, in W, shall be multiplied by one of the following factors to determine the circulation fan flow rate, in L/s: (a) 0.0604 for heat pumps, and (b) 0.0251 for all other types of heating systems.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(15)	9.36.5.15. Modeling HVAC System of Reference House	(15) Where a forced-air system is installed in the reference house, the circulation fan flow rate, in L/s, shall be multiplied by 2.30 W/L/s to determine the circulation fan power capacity, in W.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.15.(16)	9.36.5.15. Modeling HVAC System of Reference House	(16) For natural gas-, oil-, propane- and wood-burning heating systems, the energy model calculations shall set the auxiliary electricity capacity, including that of combustion fans, to 208 W during operation.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.16.(1)	9.36.5.16. Modeling Service Water Heating System of Reference House	(1) The energy source of the reference house's service water heating system, which is gas, electricity, oil, propane, wood or a heat pump, shall be the same as that for the system in the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.16.(2)	9.36.5.16. Modeling Service Water Heating System of Reference House	(2) The service water heating system in the reference house shall be sized in accordance with Subsection 9.31.6. with regard to output capacity.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.5.16.(3)	9.36.5.16. Modeling Service Water Heating System of Reference House	(3) Except as required by Table 9.36.5.16., the performance of the service water heating equipment in the reference house shall be modeled as conforming to Table 9.36.4.2. for the energy source, capacity and type of service water heating equipment in the proposed house.	N/A	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6. Tiered Energy Performance Compliance – Prescriptive Path					#N/A	

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9.36.6.1.(1)	9.36.6.1. Scope	(1) This Subsection is concerned with the energy performance improvement of the building through the implementation of energy conservation measures.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Points system could make sense for a tiered presciptive path that allows you to reach higher tiers. Without tiers the points system is not recommended as it adds more confusion without aiding in increased performance. Also, please refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.2.(1)	9.36.6.2. Compliance	(1) Compliance with this Subsection shall be achieved by	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
		(a) designing and constructing *buildings* to which this Subsection applies in accordance with one or more of the energy conservation measures prescribed in Articles 9.36.6.4. to 9.36.6.10. to accumulate the minimum sum of energy conservation points required to attain Energy Performance Tier 3 as specified in Table 9.36.6.2., and (b) complying with Subsections 9.36.2. to 9.36.4., except where these requirements are specifically permitted by this Subsection to be waived.		4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
		TABLE 9.36.6. 2. ENERGY PERFORMANCE TIERS		4	I do not support this proposed change for the reason(s) stated to the right.	No tiers proposed - see 9.36.6.1. Scope. Also refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.3.(1)	9.36.6.3. Definitions	Reserved	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.4.(1)	9.36.6.4. Building Envelope - General	(1) The *building* envelope shall be designed and constructed in accordance with Articles 9.36.2.1. to 9.36.2.5. and this Subsection.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.5.(1)	9.36.6.5. Energy Conservation Measures for Above-Ground Opaque Building Assemblies	(1) Except as permitted by Articles 9.36.2.5. and 9.36.2.11., and Sentence 9.36.2.6.(3)., the effective thermal resistance of aboveground opaque *building* assemblies or portions thereof shall be not less than that shown for the applicable heating degree-days of the *building* location in Table 9.36.2.6.-B.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.5.(2)	9.36.6.5. Energy Conservation Measures for Above-Ground Opaque Building Assemblies	(2) Above-ground walls that comply with one of the energy conservation measures prescribed in Table 9.36.6.5. shall be credited with the corresponding energy conservation points stipulated therein.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.5.(3)	9.36.6.5. Energy Conservation Measures for Above-Ground Opaque Building Assemblies	(3) The effective thermal resistance of rim joists shall be not less than that of the above-ground walls.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

Energy Performance Tier	Minimum Sum of Energy Conservation Points
1	–
2	10
3	~~Reserved~~ **20**
4	~~Reserved~~
5	~~Reserved~~

9.36.6.5.(4)	9.36.6.5. Energy Conservation Measures for Above-Ground Opaque Building Assemblies	(4) Where the top of a section of foundation wall is on average greater than or equal to 600 mm above the adjoining ground level, the effective thermal resistance of the above-ground portion of that section of wall shall be not less than that of the above-ground walls.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.5.(5)	9.36.6.5. Energy Conservation Measures for Above-Ground Opaque Building Assemblies	(5) Except for tubular daylighting devices, the effective thermal resistance of skylight shafts shall be not less than that of the above-ground walls.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.6.5.(6)	9.36.6.5. Energy Conservation Measures for Above-Ground Opaque Building Assemblies	(6) Except as provided in Sentence (7), where above-ground walls are constructed using two or more wall assemblies with different calculated effective thermal resistances, the above-ground wall assembly with the lowest effective thermal resistance value shall be used to determine the applicable energy conservation points from Table 9.36.6.5.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.5.(7)	9.36.6.5. Energy Conservation Measures for Above-Ground Opaque Building Assemblies	(7) The effective thermal resistance of one or more of the above-ground wall assemblies referred to in Sentence (5) is permitted to be less than that required to meet an energy conservation measure target listed in Table 9.36.6.5. for the wall or walls to be credited with the energy conservation points listed for that target, provided (a) the effective thermal resistance of one or more of the other aboveground wall assemblies is increased to more than the energy conservation measure target listed in Table 9.36.6.5. to account for the wall assemblies that do not meet the target, and (b) the sum of the results of each individual above-ground wall assembly area divided by its respective effective thermal resistance is less than or equal to the total area of all above	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.6.(1)	9.36.6.6. Energy Conservation Measures for Fenestration and Doors	(1) Except as provided in Sentences (2), (3) and (4), fenestration and doors that comply with one of the energy conservation measures prescribed in Table 9.36.6.6. shall be credited with the corresponding energy conservation points stipulated therein, provided all fenestration and doors comply with that energy conservation measure.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.6.(2)	9.36.6.6. Energy Conservation Measures for Fenestration and Doors	(2) Where the individual doors or windows have more than one overall thermal transmittance values (U-values), an average U-value is permitted to be used to determine the applicable energy conservation points from Table 9.36.6.6., provided the requirements of Sentence (3) are met.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.6.(3)	9.36.6.6. Energy Conservation Measures for Fenestration and Doors	(3) The U-value of one or more doors or fenestration is permitted to be greater than that required in Table 9.36.6.6., provided (a) the traded doors and fenestration are located in the same orientation, (b) the U-value of one or more of the other doors and fenestration is decreased to less than the energy conservation measure target in Table 9.36.6.6. to account for the doors and windows that do not meet the target, and (c) the sum of each individual door or fenestration area multiplied by its respective U-value is less than or equal to the total area of all fenestration and doors multiplied by the U-value target in Table 9.36.6.6. that is to be credited.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.6.(4)	9.36.6.6. Energy Conservation Measures for Fenestration and Doors	(4) Where the fenestration and doors make up not more than 17% of the total aboveground wall area, including openings, in a given orientation, the fenestration and doors in that orientation need not comply with Sentence (1) and are not subject to the provisions of Sentences (2) and (3), provided they meet or exceed the minimum Energy Rating stated in Table 9.36.6.6. that is to be credited.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.7.(1)	9.36.6.7. Energy Conservation Measures for Opaque Building Assemblies Below-Grade or in Contact with the Ground	(1) Opaque *building* assemblies below-grade or in contact with the ground shall be designed and constructed in accordance with Sentences 9.36.2.8.(2) to (10) and this Article.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.7.(2)	9.36.6.7. Energy Conservation Measures for Opaque Building Assemblies Below-Grade or in Contact with the Ground	(2) Except as permitted by Article 9.36.2.5., the effective thermal resistance of *foundation* walls shall be not less than that shown for the applicable heating degree-days of the *building* location in Table 9.36.2.8.-B.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.7.(3)	9.36.6.7. Energy Conservation Measures for Opaque Building Assemblies Below-Grade or in Contact with the Ground	(3) *Foundation* walls that comply with one of the energy conservation measures prescribed in Table 9.36.6.7. shall be credited with the corresponding energy conservation points stipulated therein.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.7.(4)	9.36.6.7. Energy Conservation Measures for Opaque Building Assemblies Below-Grade or in Contact with the Ground	(4) Where *foundation* walls are constructed with more than one effective thermal resistance (RSI) values, the energy conservation points associated with the lowest effective RSI value of any of these walls shall be credited.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.8.(1)	9.36.6.8. Energy Conservation Measures Relating to Airtightness	(1) *Buildings* to which this Subsection applies shall be designed and constructed airtight in accordance with Articles 9.36.2.9., Sentences and 9.36.2.10.(1) to (7) and this Article. (a) Articles 9.36.2.9. and 9.36.2.10., or (b) Article 9.36.2.9. and Sentences 9.36.2.10.(1) to (7) and shall, where airtightness testing is carried out in accordance with Subsection 9.36.8., comply with an Airtightness Level listed in Table 9.36.8.4.-	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

Proposed Ontario Code Sentence Number	Proposed Ontario Code Article/ Title	Proposed Ontario Code Provision	Link to the National PCF(s)	Rank	Status	Comments - Ontario Association of Architects
9.36.6.8.(2)	9.36.6.8. Energy Conservation Measures Relating to Airtightness	(2) *Buildings* that comply with an Airtightness Level determined in accordance with Clause (1)(b) shall be credited with the corresponding energy conservation points stipulated in Table 9.36.6.8.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.9.(1)	9.36.6.9. Energy Conservation Measures for HVAC Systems	(1) HVAC systems, equipment and installations shall be designed and constructed in accordance with Articles 9.36.3.2. to 9.36.3.8. and this Article.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.9.(2)	9.36.6.9. Energy Conservation Measures for HVAC Systems	(2) Where HVAC systems, equipment or techniques other than those described in this Article and Articles 9.36.3.2. to 9.36.3.8. are used, the building shall be designed and constructed in accordance with the NECB.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.9.(3)	9.36.6.9. Energy Conservation Measures for HVAC Systems	(3) Ventilation systems serving buildings to which this Subsection applies shall be equipped with a heat-recovery ventilator conforming to Article 9.36.3.9.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.9.(4)	9.36.6.9. Energy Conservation Measures for HVAC Systems	(4) Heat-recovery ventilators that comply with one of the energy conservation measures prescribed in Table 9.36.6.9. shall be credited with the corresponding energy conservation points stipulated therein.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.10.(1)	9.36.6.10. Energy Conservation Measures for Service Water Heating Equipment	(1) Service water heating equipment and components shall be designed and constructed in accordance with Subsection 9.36.4. and this Article.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.10.(2)	9.36.6.10. Energy Conservation Measures for Service Water Heating Equipment	(2) Where service water heating equipment or techniques other than those described in Subsection 9.36.4. and this Article are used, the building shall be designed and constructed in accordance with the NECB.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.10.(3)	9.36.6.10. Energy Conservation Measures for Service Water Heating Equipment	(3) Service water heating equipment that complies with one of the energy conservation measures prescribed in Table 9.36.6.10. shall be credited with the corresponding energy conservation points stipulated therein.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.11.(1)	9.36.6.11. Energy Conservation Points for Building Volume	(1) *Buildings* to which this Subsection applies that contain more than one dwelling unit, each of which contains not more than 230 m^3 of conditioned space measured at the interior surfaces of the walls, ceilings and floors enclosing the suite, are permitted to be credited with ten energy conservation points.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.6.11.(2)	9.36.6.11. Energy Conservation Points for Building Volume	(2) *Buildings* to which this Subsection applies that contain not more than 390 m^3 of conditioned space, measured at the interior surfaces of exterior walls, ceilings and floors, are permitted to be credited with energy conservation points determined in accordance with Table 9.36.6.11.	https://www.dropbox.com/s/pg5zymdtmvbq0r6/nbc15_divb_09.36.01.03._001611.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.7. Tiered Energy Performance Compliance — Performance Path						
9.36.7.1.(1)	9.36.7.1. Scope and Application	(1) This Subsection is concerned with determining compliance with energy performance tier 3 through modeling of the energy performance of components, systems and assemblies that are installed in buildings and houses with or without a *secondary suite*, described in Sentence 9.36.1.3.(3)	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Need tiers with absolute energy targets. Missing an opportunity here to set targets for the coming years and to provide a clear path towards NZEB's. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.7.1.(2)	9.36.7.1. Scope and Application	(2) For the purpose of this Subsection, the term house shall mean all houses, with or without a *secondary suite*, that (a) have heating, ventilation and air-conditioning (HVAC) systems that serve only the house, a *secondary suite*, or both, (b) have service water heating systems that serve only the house, a *secondary suite*, or both, and (c) do not have common spaces intended for occupancy with other dwelling units and houses, except for a *secondary suite*.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

Proposed Ontario Code Sentence Number	Proposed Ontario Code Article/ Title	Proposed Ontario Code Provision	Link to the National PCF(s)	Rank	Status	Comments - Ontario Association of Architects
9.36.7.2.(1)	9.36.7.2. Compliance	(1) The energy performance of buildings or houses when calculated according to Article 9.36.7.3. shall conform to the criteria indicated in Table 9.36.7.2. such that (a) the 'percent heat loss reduction' target has been met or exceeded, and (b) one of the following conditions has been satisfied (i) the 'percent improvement' target has been met or exceeded, or (ii) the 'percent house energy target' target has not been exceeded.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Percent improvement targets require extra modelling and have moving targets. As well, air tightness testing is critical for increasingly reduced targets so needs to be mandatory for performance targets. Refer to Ontario Association of Architects cover letter that accompanies this table.

		Applicable Energy Performance Tier				
Volume V_T	**Target Metrics**	**1**	**2**	**3**	**4**	**5**
> 300 m^3 and where volume is not determined	bookmark3	~~n/a~~	~~≥ 5%~~	≥ 10%	~~≥ 20%~~	~~≥ 40%~~
	Percent Improvement (2)	~~≥ 0%~~	≥ 10%	≥ 20%	~~≥ 40%~~	~~≥ 70%~~
	or bookmark2	~~≤ 100%~~	≤ 90%	≤ 80%	~~≤ 60%~~	~~≤ 30%~~
≤ 300 m^3	Percent Heat Loss Reduction (1)	~~n/a~~	~~≥ 0%~~	≥ 5%	~~≥ 15%~~	~~≥ 25%~~
	Percent Improvement (2)	~~≥ 0%~~	~~≥ 0%~~	≥ 10%	~~≥ 30%~~	~~≥ 60%~~
	or Percent House Energy Target (3)	~~≤ 100%~~	≤ 100%	≤ 90%	~~≤ 70%~~	~~≤ 40%~~

9.36.7.2.(2)	9.36.7.2. Compliance	(2) The peak cooling load for the proposed house shall not be greater than the peak cooling load for the reference house (See Sentence 9.36.7.3.(3)).	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.7.2.(3)	9.36.7.2. Compliance	(3) The representative volume of conditioned space, V_T, used for determining the target energy performance shall be the total volume of conditioned space within the building or house, expressed in m^3.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.7.3.(1)	9.36.7.3. Energy Performance Improvement Compliance Calculations	(1) Except where otherwise stated in this article, the proposed and reference houses shall be modeled in accordance with Subsection 9.36.5. to determine (a) the annual energy consumption of the proposed house and the house energy target of the reference house, (b) the annual gross space heat loss of the proposed and reference house, (See Sentence (4)), and, (c) the peak cooling load of the proposed and reference house. (See Sentence (3))	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.7.3.(2)	9.36.7.3. Energy Performance Improvement Compliance Calculations	(2) ~~Except for tier 1, where space heating is provided by a heat pump in the proposed house, the reference house shall be modelled using (a) equipment of the same type as the secondary or back-up system in the proposed house, which complies with the efficiency~~ requirements of Article 9.36.3.10., or (b) electric resistance heating where no back-up is provided in the proposed house.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.7.3.(3)	9.36.7.3. Energy Performance Improvement Compliance Calculations	(3) Where cooling systems are not installed in the proposed house, both the proposed and reference houses shall have additional models using appropriately sized space-cooling equipment serving all conditioned spaces to determine the peak cooling load.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.7.3.(4)	9.36.7.3. Energy Performance Improvement Compliance Calculations	(4) The annual gross space heat loss shall be calculated as the sum of the cumulative heat loss from interior to exterior, via: (a) conduction across opaque and transparent elements of the envelope, (b) infiltration and exfiltration, and (c) mechanical ventilation.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.7.3.(5)	9.36.7.3. Energy Performance Improvement Compliance Calculations	(5) The 'percent heat loss reduction' shall be calculated by subtracting the annual gross space heat loss of the proposed house from the annual gross space heat loss of the reference house and dividing the result by the annual gross space heat loss of the reference house.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

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9.36.7.3.(6)	9.36.7.3. Energy Performance Improvement Compliance Calculations	(6) The 'percent improvement' shall be calculated by subtracting the annual energy consumption of the proposed house from the house energy target of the reference house and dividing the result by the house energy target of the reference house.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.7.3.(7)	9.36.7.3. Energy Performance Improvement Compliance Calculations	(7) The 'percent house energy target' shall be calculated by dividing the annual energy consumption of the proposed house by the house energy target of the reference house.	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.7.3.(8)	9.36.7.3. Energy Performance Improvement Compliance Calculations	(8) The airtightness value used in the energy model for the proposed house shall be use either (a) the appropriate airtightness value set out in Clause 9.36.5.10.(9)(a), or (b) where an airtightness test is to be conducted (i) a design airtightness, until the airtightness has been measured in accordance with Sentence 9.36.8.3.(1), and (ii) once the actual airtightness has been measured, the airtightness value set out in Sentence 9.36.5.10.(9).	https://www.dropbox.com/s/lkss64g6rfelryi/nbc15_divb_09.36.01.03._001617.pdf?dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.8. Measuring Airtightness						
9.36.8.1.(1)	9.36.8.1. Scope and Application	(1) This Subsection is concerned with: (a) determining the airtightness of *buildings* and *dwelling units* and parts thereof: (i) for use in the energy model calculations described in Subsection 9.36.5., or (ii) for input to the determination of Airtightness Levels described in Clause (1)[b], and (b) determining an Airtightness Level for the building or dwelling unit for comp liance with tiered performance specified in Subsection 9.36.7. or Article 9.36.6.8.	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?_dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.8.2.(1)	9.36.8.2. Definitions	(1) For the purposes of this Subsection, the following terms shall have the meanings stated herein: (a) "zone" means a *conditioned space* or part thereof having a sufficiently large opening onto the location where the airtigh tness testing equipment is installed to provide enough airflow such that the entire zone is at the same pressure, (b) "attached zone" means a zone whose boundary area is fully or partially in contact with an adjacent zone or zones, (c) "ACH_{50}" refers to the air changes per hour at a reference pressure of 50 Pa, (d) "NLA_{10}" refers to the normalized leakage area at a reference pressure of 10 Pa, and (e) "NLR_{50}" refers to the normalized leakage rate at a reference pressure of 50 Pa.	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?_dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.8.3.(1)	9.36.8.3. Determination of Airtightness	(1) Where airtightness is to be used as input to the energy model calculations, it shall be determined through a multi-point depressurization test carried out in accordance with CAN/CGSB-149.10, "Determination of the Airtightness of Building Envelopes by the Fan Depressurization Method," using the following parameters described therein: (a) as-operated, and (b) guarded or unguarded.	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?_dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Airtightness testing needs to be mandatory. Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.8.3.(2)	9.36.8.3. Determination of Airtightness	(2) Except as provided in Sentence (3), where airtightness is to be used to demonstrate compliance with an Airtightness Level listed in Table 9.36.8.3.-A or -B, it shall be determined through a single-point, two-point or multipoint depressurization test carried out in accordance with CAN/CGSB-149.10, "Determination of the Airtightness of Building Envelopes by the Fan Depressurization Method," using the following parameters described therein: (a) as-operated, and	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?_dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.8.3.(3)	9.36.8.3. Determination of Airtightness	(3) Determining NLA_{10} using a single-point test is not permitted.	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?_dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.8.4.(1)	9.36.8.4. Determination of Airtightness Level	(1) Compliance with an Airtightness Level listed in Table 9.36.8.4.-A or -B shall be determined in accordance with this Article using the value of ACH_{50}, NLA_{10}, or NLR_{50} determined in accordance with Sentence 9.36.8.3.(2).	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?_dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.8.4.(2)	9.36.8.4. Determination of Airtightness Level	(2) For the purposes of Sentences (3) and (4), the Airtightness Level for *buildings* or *dwelling units* containing more than one zone shall be the lowest Airtightness Level achieved for the zones therein.	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?_dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.
9.36.8.4.(3)	9.36.8.4. Determination of Airtightness Level	(3) Except as provided in Sentence (4), the Airtightness Level for zones and attached zones shall be determined by complying with one of the corresponding airtightness values stipulated in Table 9.36.8.4.-A.	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?_dl=0	4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

Proposed Ontario Code Sentence Number	Proposed Ontario Code Article/ Title	Proposed Ontario Code Provision	Link to the National PCF(s)
9.36.8.4.(4)	9.36.8.4. Determination of Airtightness Level	(4) Where the unguarded method is used to determine the airtightness of an attached zone, the Airtightness Level shall be determined by complying with one of the corresponding airtightness values stipulated in Table 9.36.8.4.-B, provided the zone is tested independently.	https://www.dropbox.com/s/r7f743ddjpaoyqt/nbc15_divb_09.36._001610.pdf?dl=0

Rank	Status	Comments - Ontario Association of Architects
4	I do not support this proposed change for the reason(s) stated to the right.	Refer to Ontario Association of Architects cover letter that accompanies this table.

Subject:	FW: TIME SENSETIVE: Information related to your comments on Energy Efficiency from Ontario's Building Code - Winter 2022 Consultation
Attachments:	Extract of Outstanding Questions from Energy Efficiency Consultation Session March 8 2022.pdf
Importance:	High

From: Building Code Consultation (MMAH) <BuildingCode.Consultation@ontario.ca>
Sent: October 4, 2022 10:55 AM
To: Building Code Consultation (MMAH) <BuildingCode.Consultation@ontario.ca>
Subject: TIME SENSETIVE: Information related to your comments on Energy Efficiency from Ontario's Building Code - Winter 2022 Consultation
Importance: High

Good Morning,

We hope this email finds you well.

Following the engagement session on energy efficiency changes in March, and as part of the feedback on the proposed changes for the next edition of Ontario's Building Code, we received several new proposals. The proposals were related to changes that were either not included in National's Construction Codes, or changes that would alter National Code requirements to a degree that would require committee reviews.

By signing the Reconciliation Agreement on Construction Codes in August 2020, Ontario formally committed to increasing harmonization and reducing variations between Ontario's Building Code and the National Construction Codes. These efforts also include working with other provinces, territories, and the federal government to streamline the code development process. As such, it is increasingly important that any new code change requests be made to the National Research Council (NRC) at the following link: https://nrc.canada.ca/en/certifications-evaluations-standards/codes-canada/codes-development-process/request-code-change.

Further to the related explanation in the attached extract of the Q&A document sent on March 8, 2022, new code change requests need to be prepared as code change proposals and vetted through NRC's code development system. **NRC is currently working on the development of prescriptive requirements for energy efficiency**, therefore any proposals submitted to National at this point may be considered and approved as part of this process which would enable **earlier** cross-country **adoption** of the proposed provisions.
You are strongly encouraged to submit your proposal to NRC at your earliest convenience.

Please contact the Building and Development Branch at Codeinfo@ontario.ca should you have any questions or concerns.

Thank you for your ongoing understanding and collaboration.

Building and Development Branch
Ministry of Municipal Affairs and Housing

777 Bay Street 12th Floor | M7A 2J3
Toronto, ON

The March 8, 2022, letter included the following information:

“Outstanding Questions from Winter 2022 Consultation on the Next Edition of Ontario's Building Code: Energy Efficiency

1. General questions related to requesting material changes to the National requirements:

Answer: With respect to requests related to making changes to National’s requirements, (i.e., add/ remove/alter some sections), Ontario has signed the Reconciliation Agreement and is committed to further harmonizing with the National Construction Codes. The agreement asks that provinces reduce the number of variations. During this phase of consultation, Ontario is focusing on the adoption of national content only. New or different proposals would be addressed in a separate consultation in coordination with National. The requests to change National requirements will need to be prepared as code change proposals and vetted through National’s code development system. We encourage everyone wishing to submit a Code change request to share their proposals with the National Research Council for their early consideration. Work is in progress by the National Standing Committee on Energy Efficiency, which includes the development of the final prescriptive tiers. Ontario supports further development of the prescriptive tier requirements at the National level as a priority and finalization in a timely manner, without waiting for their next edition. As a result, the provinces will have clearer options to obtain energy conservation points in the prescriptive path.

2. ……..“